CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

2375 Northside Drive, Suite 100, San Diego, CA 92108
(619) 516-1990 • Fax (619) 516-1994
http://www.waterboards.ca.gov/sandiego/

ORDER NO. R9-2015-0073
NPDES NO. CA0109282

WASTE DISCHARGE REQUIREMENTS FOR SOUTHERN CALIFORNIA EDISON COMPANY, SAN ONOFRE NUCLEAR GENERATING STATION, SAN DIEGO COUNTY DISCHARGE TO THE PACIFIC OCEAN

The following Discharger is subject to waste discharge requirements (WDRs) set forth in this Order:

Table 1. Discharger Information

Discharger:	Southern California Edison Company
Facility:	San Onofre Nuclear Generating Station
Facility Address:	5000 Pacific Coast Highway
	San Clemente, CA 92672
	San Diego County

Table 2. Discharge Locations[1]

Discharge Point	Effluent Description	Latitude (North)	Longitude (West)	Receiving Water
002	Cooling water, treated domestic wastewater, and other low-volume wastewater	33º 20’ 55.8” N	117º 34’ 13.5” W	Pacific Ocean
003	Cooling water, treated domestic wastewater, and other low-volume wastewater	33º 21’ 11.7” N	117º 33’ 51.6” W	Pacific Ocean

Table 3. Internal Waste Streams[2]

Internal Waste Streams to either Discharge Point 002 or 003:	
001-A	NIA Sewage Treatment Plant
001-E	Yard Drains
001-F	Dewatering
002-A / 003-A	Chemical and Non-Chemical Metal Cleaning Wastes (mobile)
002-D / 003-D	Makeup Demineralizer (mobile)
002-E / 003-E	Radwaste System[3]
002-J / 003-J	Intake Structure Sump
002-K / 002-K	Concrete Cutting Water (mobile)

[1] Outfalls 001, 004, and 005 have been discontinued and are no longer covered under this Order.
[2] Internal Waste Streams 001-B, 001-C, 001-D, 002/003-B, 002/003-C, 002/003-F, 002/003-G, 002/003-H, and 002/003-I have been discontinued and are no longer covered under this Order.
[3] The discharge of licensed radioactive material is regulated by the Nuclear Regulatory Commission (NRC), pursuant to the Atomic Energy Act. More information is available in the Fact Sheet (Attachment F) section III.E.3.

Internal Waste Streams to either Discharge Point 002 or 003:	
002-L / 003-L	Common Oil Removal System
002-M / 003-M	Dewatering

Table 4. Administrative Information

This Order was adopted on:	**December 16, 2015**
This Order shall become effective on:	**February 1, 2016**
This Order shall expire on:	**January 31, 2021**
The Discharger shall file a Report of Waste Discharge as an application for renewal of WDRs in accordance with title 23, California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	**180 days prior to the Order expiration date**
The U.S. Environmental Protection Agency (USEPA) and the California Regional Water Quality Control Board, San Diego Region, have classified this discharge as follows:	**Major**

I, David W. Gibson, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, San Diego Region, on December 16, 2015.

David W. Gibson, Executive Officer

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I. FACILITY INFORMATION

Southern California Edison Company (Discharger) is the owner and operator of the San Onofre Nuclear Generating Station (SONGS or Facility), a nuclear-fueled electrical power generating facility undergoing decommissioning. The Facility is located within the boundaries of the United States Marine Corps Camp Pendleton, San Diego County, California, immediately adjacent to the Pacific Ocean, five miles south of the City of San Clemente.

The Facility comprises three separate power generating units: the North Industrial Area (NIA, formerly Unit 1), Unit 2, and Unit 3. The NIA ceased power generation in 1992. In June 2013, the Discharger also ceased power generation from Units 2 and 3. During the process to safely remove the facility from service and reduce residual radioactivity levels, known as the decommissioning process, the Facility continues to discharge wastewater and cooling water (see Table 3) to the Pacific Ocean through two ocean outfalls for Units 2 and 3. Wastewater flows from the NIA are routed to either of the two ocean outfalls.

Additional information describing the Facility is summarized in Tables 1, 2, and 3 of this Order and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application.

II. FINDINGS

The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board), finds:

A. Legal Authorities. This Order serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (Water Code) (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). This Order shall serve as an NPDES permit for point source discharges from this facility to surface waters.

B. Background and Rationale for Requirements. The San Diego Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through E and G are also incorporated into this Order.

C. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections VI.A.2.a-d & f, VI.C.1.b, and VI.C.6 are included to implement State law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

D. Executive Officer Delegation of Authority. The San Diego Water Board by prior resolution has delegated all matters that may legally be delegated to its Executive Officer to act on its behalf pursuant to Water Code section 13223. Therefore, the Executive Officer is authorized to act on the San Diego Water Board's behalf on any matter within this Order unless such delegation is unlawful under Water Code section 13223 or this Order explicitly states otherwise.

E. Notification of Interested Parties. The San Diego Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet (Attachment F).

F. Consideration of Public Comment. The San Diego Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet (Attachment F).

THEREFORE, IT IS HEREBY ORDERED, that this Order supersedes Order Nos. R9-2005-0005 and R9-2005-0006, except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the San Diego Water Board from taking enforcement action for past violations of the previous Orders. If any part of this Order is subject to a temporary stay of enforcement, unless otherwise specified, the Discharger shall comply with the analogous portions of the previous Orders, which shall remain in effect for all purposes during the pendency of the stay.

III. DISCHARGE PROHIBITIONS

A. The discharge of waste in a manner or to a location that has not been specifically described to the San Diego Water Board and for which valid WDRs are not in force are prohibited.

B. The discharge of oil or any residuary product of petroleum to waters of the state, except in accordance with waste discharge requirements or other provisions of division 7 of the Water Code, is prohibited.

C. The discharge of polychlorinated biphenyl (PCB) compounds, such as those commonly used for transformer fluid, is prohibited.

D. The total combined discharge of wastewater, through Discharge Point No. 002 and Discharge Point No. 003, in excess of 56.3 million gallons per day (MGD) is prohibited.

E. The discharge of total residual oxidants that are used to control fouling within the main condenser cooling system, such as chlorine or bromine, is prohibited though either discharge point for more than two hours per day unless the Discharger has demonstrated to the Executive Officer's satisfaction in advance of the discharge that a discharge lasting for more than two hours is required for macroinvertebrate control.

F. The discharge of NIA Sewage Treatment Plant effluent without also discharging cooling water, at a ratio of at least 10:1, cooling water to wastewater, is prohibited.

G. The discharge of wastewater not in compliance with the Discharge Prohibitions contained in chapter 4 of the Water Quality Control Plan for the San Diego Basin (Basin Plan), incorporated in this Order as if fully set forth herein and summarized in Attachment G, is prohibited.

H. The discharge of wastewater not in compliance with the Discharge Prohibitions contained in the Water Quality Control Plan - Ocean Waters of California 2012 (Ocean

Plan), incorporated in this Order as if fully set forth herein and summarized in Attachment G, is prohibited.

I. The discharge shall not cause a violation of any applicable water quality standards for receiving waters adopted by the San Diego Water Board or the State Water Board as required by the federal CWA and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to section 303 of the Federal CWA, and amendments thereto, the San Diego Water Board will revise and modify this Order in accordance with such more stringent standards.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Wastewater is discharged through Discharge Points Nos. 002 and 003 to the Pacific Ocean. Internal discharge point designations with limitations are based on the discrete location at which the internal waste stream discharges to the main waste stream, (i.e. Discharge Points Nos. 002 and 003). Effluent limitations are applied both at the internal discharge points and at the outfalls.

A. Effluent Limitations

1. Internal Effluent Limitations

a. Treated Domestic Wastewater (INT-001-A)

i. The following internal effluent limitations are applicable to treated domestic wastewaters from the NIA Sewage Treatment Plant, with compliance determined at INT-001-A, as specified in the Monitoring and Reporting Program (MRP, Attachment E):

Table 5. Internal Effluent Limitations – Treated Domestic Wastewater

Parameter	Units	Internal Effluent Limitations		
		Average Monthly	Average Weekly	Instantaneous Maximum
Oil and Grease	mg/L	25	40	75
	lbs/day	21[1]	--	--
Total Suspended Solids (TSS)	mg/L	Not more than 25% of influent TSS		
Settleable Solids	ml/L	1.0	1.5	3.0
Turbidity	NTUs	75	100	225
pH	S.U.	Within the limits of 6.0 to 9.0 at all times		

[1] Mass based effluent limitations were calculated based on a max discharge flow rate of 0.05 MGD.

ii. Discharge of effluent from the NIA Sewage Treatment Plant located at the NIA through Discharge Points Nos. 002 and 003 may occur only when the Facility, is also discharging saltwater / cooling water simultaneously at a ratio of at least 10:1, cooling water to wastewater.

b. Metal Cleaning Wastewater (INT-002-A and INT-003-A)

i. The following internal effluent limitations are applicable to metal cleaning wastewater (chemical and non-chemical), with compliance measured at Monitoring Locations INT-002-A and INT-003-A, as specified in the MRP

(Attachment E):

Table 6. Internal Effluent Limitations – Metal Cleaning Wastewater

Parameter	Units	Internal Effluent Limitations	
		30-Day Average	Maximum Daily
TSS	mg/L	30	100
Oil and Grease	mg/L	15	20
Copper, Total Recoverable	mg/L	1.0	1.0
Iron, Total Recoverable	mg/L	1.0	1.0

c. Combined Low-Volume Miscellaneous Discharges (INT-001-E, INT-001-F, INT-002-D, INT-002-E, INT-002-J, INT-002-K, INT-002-L, INT-002-M, INT-003-D, INT-003-E, INT-003-J, INT-003-K, INT-003-L, and INT-003-M)

Table 7. Low-Volume Miscellaneous Discharges Description

001-E	Yard Drains
001-F	Dewatering
002-D / 003-D	Makeup Demineralizer (mobile)
002-E / 003-E	Radwaste System
002-J / 003-J	Intake Structure Sump
002-K / 003-K	Concrete Cutting Water (mobile)
002-L / 003-L	Common Oil Removal System
002-M / 003-M	Dewatering

i. Internal monitoring locations INT-001-E, INT-001-F, INT-002-D, INT-002-E, INT-002-J, INT-002-K, INT-002-L, INT-002-M, INT-003-D, INT-003-E, INT-003-J, INT-003-K, INT-003-L, and INT-003-M have been established to monitor the quality of these discharges.

ii. The following internal effluent limitations are applicable to a flow-weighted composite of discharges of low-volume miscellaneous wastewater discharges, with compliance measured at Monitoring Locations INT-001-E, INT-001-F, INT-002-D, INT-002-E, INT-002-J, INT-002-K, INT-002-L, INT-002-M, INT-003-D, INT-003-E, INT-003-J, INT-003-K, INT-003-L, and INT-003-M, as specified in the MRP (Attachment E):

Table 8. Internal Effluent Limitations – Combined Low-Volume Miscellaneous Discharges

Parameter	Internal Effluent Limitations			
	Units[1]	6-Month Median	30-Day Average	Maximum Daily
Total Suspended Solids	mg/L	--	30	100
	lbs/day	--	3200	10700
Oil and Grease	mg/L	--	15	20
	lbs/day	--	1600	2100

Parameter	Internal Effluent Limitations			
	Units[1]	6-Month Median	30-Day Average	Maximum Daily
pH	s.u.	Between 6.0 and 9.0 at all times.		
LIMITATIONS FOR MARINE AQUATIC LIFE				
Arsenic	lbs/day	6.2	--	34.4
Cadmium, Total Recoverable	lbs/day	1.2	--	4.7
Chromium VI, Total Recoverable[2]	lbs/day	2.3	--	9.4
Copper, Total Recoverable	lbs/day	1.4	--	12.0
Mercury, Total Recoverable	lbs/day	0.05	--	0.19
Selenium, Total Recoverable	lbs/day	17.6	--	70.5
Silver, Total Recoverable	lbs/day	0.65	--	3.1
Zinc, Total Recoverable	lbs/day	14.9	--	85.4
Cyanide, Total (as Cyanide)[3]	lbs/day	1.2	--	4.7
Ammonia (as Nitrogen)	lbs/day	705	--	2820
Phenolic Compounds (non-chlorinated)[4]	lbs/day	35	--	141
Chlorinated Phenolics[5]	lbs/day	1.2	--	4.7
Endosulfan[6]	lbs/day	0.01	--	0.02
Endrin	lbs/day	0.002	--	0.004
Hexachlorocyclohexane (HCH)[7]	lbs/day	0.004	--	0.009
LIMITATIONS FOR HUMAN HEALTH – NONCARCINOGENS				
Acrolein	lbs/day	--	258	--
Antimony	lbs/day	--	1400	--
Bis(2-chloroethoxy) methane	lbs/day	--	5.2	--
Bis(2-chloroisopropyl) ether	lbs/day	--	1400	--
Chlorobenzene	lbs/day	--	670	--
Chromium (III)	lbs/day	--	223000	--
Di-n-butyl phthalate	lbs/day	--	4100	--
Dichlorobenzenes[8]	lbs/day	--	6000	--
Diethyl phthalate	lbs/day	--	39000	--
Dimethyl phthalate	lbs/day	--	960000	--
4,6-Dinitro-2-methylphenol	lbs/day	--	260	--
2,4-Dinitrophenol	lbs/day	--	4.7	--
Ethylbenzene	lbs/day	--	4800	--
Fluoranthene	lbs/day	--	17.6	--
Hexachlorocyclopentadiene	lbs/day	--	68	--
Nitrobenzene	lbs/day	--	5.8	--
Thallium	lbs/day	--	2.3	--

Parameter	Internal Effluent Limitations			
	Units[1]	6-Month Median	30-Day Average	Maximum Daily
Toluene	lbs/day	--	99800	--
Tributyltin	lbs/day	--	0.002	--
1,1,1-Trichloroethane	lbs/day	--	634000	--
LIMITATIONS FOR PROTECTION OF HUMAN HEALTH -- CARCINOGENS				
Acrylonitrile	lbs/day	--	0.12	--
Aldrin	lbs/day	--	2.6E-05	--
Benzene	lbs/day	--	6.9	--
Benzidine	lbs/day	--	8.1E-05	--
Beryllium	lbs/day	--	0.04	--
Bis(2-chloroethyl) ether	lbs/day	--	0.05	--
Bis(2-ethylhexyl) phthalate	lbs/day	--	4.1	--
Carbon tetrachloride	lbs/day	--	1.1	--
Chlordane[9]	lbs/day	--	2.7E-05	--
Chlorodibromomethane	lbs/day	--	10	--
Chloroform	lbs/day	--	153	--
Dichloro, diphenyl, trichloroethane (DDT)[10]	lbs/day	--	0.0002	--
1,4-Dichlorobenzene	lbs/day	--	21	--
3,3'-Dichlorobenzidine	lbs/day	--	0.09	--
1,2-Dichloroethane	lbs/day	--	33	--
1,1-Dichloroethylene	lbs/day	--	1.0	--
Dichlorobromomethane	lbs/day	--	7.3	--
Dichloromethane	lbs/day	--	530	--
1,3-Dichloropropene	lbs/day	--	10.5	--
Dieldrin	lbs/day	--	4.7E-05	--
2,4-Dinitrotoluene	lbs/day	--	3.1	--
1,2-Diphenylhydrazine	lbs/day	--	0.19	--
Halomethanes[11]	lbs/day	--	150	--
Heptachlor	lbs/day	--	5.9E-05	--
Heptachlor Epoxide	lbs/day	--	2.3E-05	--
Hexachlorobenzene	lbs/day	--	0.00025	--
Hexachlorobutadiene	lbs/day	--	16	--
Hexachloroethane	lbs/day	--	2.9	--
Isophorone	lbs/day	--	857	--
N-nitrosodimethylamine	lbs/day	--	8.6	--
N-nitrosodi-N-propylamine	lbs/day	--	0.45	--
N-nitrosodiphenylamine	lbs/day	--	2.9	--
Polynuclear aromatic hydrocarbons (PAHs)[12]	lbs/day	--	0.01	--

Parameter	Internal Effluent Limitations			
	Units[1]	6-Month Median	30-Day Average	Maximum Daily
Polychlorinated biphenyls (PCBs)[13]	lbs/day	--	2.2E-05	--
TCDD equivalents[14]	lbs/day	--	4.6E-09	--
1,1,2,2-Tetrachloroethane	lbs/day	--	2.7	--
Tetrachloroethylene	lbs/day	--	2.3	--
Toxaphene	lbs/day	--	0.00025	--
Trichloroethylene	lbs/day	--	32	--
1,1,2-Trichloroethane	lbs/day	--	11	--
2,4,6-Trichlorophenol	lbs/day	--	0.34	--
Vinyl chloride	lbs/day	--	42	--

[1] Mass-based effluent limitations are expressed as lbs/day which are calculated as follows: Parameter Concentration (if expressed as mg/L) x Flow Limit (expressed as MGD) x 8.34 (conversion factor) = Mass-based Effluent Limitation expressed as lbs/day. Parameter Concentration (if expressed as µg/L) x Flow Limit (expressed as MGD) x 0.00834 (conversion factor) = Mass-based Effluent Limitation expressed as lbs/day. The mass emission limitations calculations utilized a combined low-volume flow of 12.8 MGD in conjunction with a dilution of 10:1.

[2] The Discharger may, at their option, apply this effluent limitation as a total chromium effluent limitation.

[3] If the Discharger can demonstrate to the satisfaction of USEPA and the State Water Resources Control Board (State Water Board) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations may be evaluated with the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in Code of Federal Regulations, title 40 (40 CFR) part 136.

[4] Non-chlorinated phenolic compounds shall mean the sum of 2,4-dimethylphenol, 4,6-dinitro-2-methylphenol, 2,4-dinitrophenol, 2-methylphenol, 4-methylphenol, 2-nitrophenol, 4-nitrophenol, and phenol.

[5] Chlorinated phenolic compounds shall mean the sum of 4-chloro-3-methylphenol, 2-chlorophenol, pentachlorophenol, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol.

[6] Endosulfan shall mean the sum of alpha-endosulfan, beta-endosulfan, and endosulfan sulfate.

[7] HCH (hexachlorocyclohexane) shall mean the sum of the alpha, beta, gamma (Lindane), and delta isomers of hexachlorocyclohexane.

[8] Dichlorobenzenes shall mean the sum of 1,2- and 1,3-dichlorobenzene.

[9] Chlordane shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

[10] DDT (dichloro, diphenyl, trichloroethane) shall mean the sum of 4,4'DDT; 2,4'DDT; 4,4'DDE; 2,4'DDE; 4,4'DDD; and 2,4'DDD.

[11] Halomethanes shall mean the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

[12] PAHs (polynuclear aromatic hydrocarbons) shall mean the sum of acenapthalene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo[k]fluoranthene; 1,12-benzoperylene; benzo[a]pyrene; chrysene; dibenzo[a,h]anthracene; fluorene; indeno[1,2,3-cd]pyrene; phenanthrene; and pyrene.

[13] PCBs (polychlorinated biphenyls) shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of aroclor-1016, aroclor-1221, aroclor-1232, aroclor-1242, aroclor-1248, arolclor-1254, and arcolor-1260.

[14] TCDD (Tetrachlorodibenzodioxin) Equivalents represent the sum of concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their

respective toxicity factors, as shown by the table below. USEPA Method 8280 may be used to analyze TCDD equivalents.

Isomer Group	Toxicity Equivalence Factor
2,3,7,8 – tetra CDD	1.0
2,3,7,8 – penta CDD	0.5
2,3,7,8 – hexa CDD	0.1
2,3,7,8 – hepta CDD	0.01
octa CDD	0.001
2,3,7,8 – tetra CDF	0.1
1,2,3,7,8 – penta CDF	0.05
2,3,4,7,8 – penta CDF	0.5
2,3,7,8 – hexa CDFs	0.1
2,3,7,8 – hepta CDFs	0.01
octa CDF	0.001

d. Internal Effluent Limitations – Individual, Low-Volume, Miscellaneous Discharges from NIA (001-E, 001-F), Unit 2 (002-D, 002-E, 002-J, 002-K, 002-L, 002-M), and Unit 3 (003-D, 003-E, 003-J, 003-K, 003-L, 003-M)

The following internal effluent limitations shall be applicable to discharges of all individual, low-volume, miscellaneous wastewater discharges from NIA, Unit 2, and Unit 3. Compliance shall be determined at Monitoring Locations INT-001-E and INT-001-F (NIA); INT-002-D, INT-002-E, INT-002-J, INT-002-K, INT-002-L, INT-002-M (Unit 2); and INT-003-D, INT-003-E, INT-003-J, INT-003-K, INT-003-L, INT-003-M (Unit 3) as specified in the MRP (Attachment E):

Table 9. Internal Effluent Limitations – Individual, Low-Volume, Miscellaneous Discharges

Parameter	Units	Effluent Limitations	
		30-Day Average	Maximum Daily
TSS	mg/L	30	100
Oil and Grease	mg/L	15	20

2. Ocean Outfalls (Discharge Points Nos. 002 and 003)

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Points Nos. 002 and 003, with compliance measured at Monitoring Location Nos. EFF-002 and EFF-003, respectively, as specified in the MRP (Attachment E):

Table 10. Final Effluent Limitations – Ocean Outfall Discharge Points Nos. 002 or 003

Parameter	Units	Effluent Limitations		
		Maximum Daily	Instantaneous Maximum	Six-Month Median
Total Residual Chlorine	µg/L	88	660	22

Chronic Toxicity	Pass/Fail	[1]	--	--
Residual Heat	ºF	--	[2]	--
Arsenic	µg/L	--	850	--
Cadmium	µg/L	--	110	--
Chromium (hexavalent)	µg/L	--	220	--
Copper	µg/L	--	310	--
Lead	µg/L	--	220	--
Mercury	µg/L	--	4.4	--
Nickel	µg/L	--	550	--
Selenium	µg/L	--	1,700	--
Silver	µg/L	--	75	--
Zinc	µg/L	--	2,100	--
Cyanide[3]	µg/L	--	110	--
Ammonia, Un-ionized (as Nitrogen)	mg/L	--	66	--
Non-Chlorinated Phenolic Compounds	µg/L	--	3,300	--
Chlorinated Phenolics	µg/L	--	110	--
Endosulfan	µg/L	--	0.30	--
Endrin	µg/L	--	0.066	--
HCH	µg/L	--	0.13	--

[1] Compliance with the Maximum Daily Effluent Limitation (MDEL) for chronic toxicity shall be based on the procedures specified in section III.C of the MRP (Attachment E) of this Order.

[2] The maximum temperature of the discharge through Discharge Point Nos. 002 and 003 to the Pacific Ocean shall not exceed, at any time, the natural temperature of the receiving water by more than 20ºF.

[3] If the Discharger can demonstrate to the satisfaction of the San Diego Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by the combined measurement of free cyanide, simple alkali metal cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR part 136.

3. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitation

The receiving water limitations set forth below for ocean waters are based on water quality objectives contained in the Basin Plan and the Ocean Plan and are a required part of this Order. The discharge shall not cause or contribute to a violation of these limitations in the Pacific Ocean. Compliance with these receiving water limitations shall be determined from samples collected at stations representative of the area within the waste field where initial dilution is completed.

1. Bacterial Characteristics

a. Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas outside this zone used for water contact sports, as determined by the San Diego Water Board (i.e., waters designated as REC-1), but including all kelp beds, the following bacterial objectives shall be maintained throughout the water column:

30-day Geometric Mean – The following standards are based on the geometric mean of the five most recent samples from each site:

i. Total coliform density shall not exceed 1,000 per 100 mL;
ii. Fecal coliform density shall not exceed 200 per 100 mL; and
iii. Enterococcus density shall not exceed 35 per 100 mL.

Single Sample Maximum:

i. Total coliform density shall not exceed 10,000 per 100 mL;
ii. Fecal coliform density shall not exceed 400 per 100 mL;
iii. Enterococcus density shall not exceed 104 per 100 mL; and
iv. Total coliform density shall not exceed 1,000 per 100 mL when the fecal coliform/total coliform ratio exceeds 0.1.

b. The “Initial Dilution Zone” of wastewater outfalls shall be excluded from designation as kelp beds for purposes of bacterial standards. Adventitious assemblages of kelp plants on waste discharge structures (e.g., outfall pipes and diffusers) do not constitute kelp beds for purposes of bacterial standards.

c. At all areas where shellfish may be harvested for human consumption, as determined by the San Diego Water Board, the median total coliform density shall not exceed 70 per 100 ml throughout the water column, and not more than 10 percent of the samples shall exceed 230 per 100 ml.

2. Physical Characteristics

a. Floating particulates and grease and oils shall not be visible.

b. The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface.

c. Natural light shall not be significantly reduced at any point outside the initial dilution zone as a result of the discharge of waste.

d. The rate of deposition of inert solids and the characteristics of inert solids in the ocean sediments shall not be changed such that benthic communities are degraded.

3. Chemical Characteristics

a. The dissolved oxygen concentration shall not, at any time, be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials.

b. The pH shall not be changed, at any time, more than 0.2 units from that which occurs naturally.

c. The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.

d. The concentration of substances set forth in chapter II, table 1 of the Ocean Plan, shall not be increased in marine sediments to levels that would degrade indigenous biota.

e. The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life.

f. Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota.

4. Biological Characteristics

a. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded.

b. The natural taste, odor, color of fish, shellfish, or other marine resources used for human consumption shall not be altered.

c. The concentration of organic materials in fish, shellfish, or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.

5. Radioactivity

a. Discharge of radioactive waste shall not degrade marine life.

6. Elevated Temperature Requirements (Thermal Plan)

a. Elevated temperature wastes shall be discharged to the open ocean away from the shoreline to achieve dispersion through the vertical water column.

b. Elevated temperature wastes shall be discharged a sufficient distance from areas of special biological significance to assure the maintenance of natural temperature in these areas.

c. The discharge of elevated temperature wastes shall not result in increases in the natural water temperature exceeding 4°F at (a) the shoreline, (b) the surface of any ocean substrate, or (c) the ocean surface beyond 1,000 feet from the discharge system. The surface temperature limitation shall be maintained at least 50 percent of the duration of any complete tidal cycle.

B. Groundwater Limitations – Not Applicable

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D.

2. The Discharger shall comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:

a. The Discharger shall comply with all requirements and conditions of this Order. Any permit non-compliance constitutes a violation of the CWA and/or the Water Code and is grounds for enforcement action, permit termination, revocation and reissuance, or modification, or for denial of an application for permit renewal, modification, or reissuance.

b. All proposed new treatment facilities and expansions of existing treatment facilities shall be completely constructed and operable prior to initiation of the discharge from the new or expanded facilities. The Discharger shall submit a certification report for each new treatment facility, expansion of an existing treatment facility, and re-ratings, the certification report shall be prepared by the design engineer. For re-ratings, the certification report shall be prepared by the engineer who evaluated the treatment facility capacity. The certification report shall do the following:

i. Identify the design capacity of the treatment facility, including the daily and 30-day design capacity,

ii. Certify the adequacy of each component of the treatment facility, and

iii. Contain a requirement-by-requirement analysis, based on acceptable engineering practices, of the process and physical design of the facility to ensure compliance with this Order.

The signature and engineering license number of the engineer preparing the certification report shall be affixed to the report. If reasonable, the certification report shall be submitted prior to beginning construction. The Discharger shall not initiate a discharge from an existing treatment facility at a daily flow rate in excess of its previously approved design capacity until:

i. The certification report is received by the Executive Officer,

ii. The Executive Officer has received written notification of completion of construction (new treatment facilities and expansions only),

iii. An inspection of the facility has been made by staff of the San Diego Water Board or their designated representatives (new treatment facilities and expansions only), and

iv. The Executive Officer has provided the Discharger with written authorization to discharge at a daily flow rate in excess of its previously approved design capacity.

c. All waste treatment, containment, and disposal facilities shall be protected against 100-year peak stream flows as defined by the San Diego County flood control agency.

d. All waste treatment, containment, and disposal facilities shall be protected against erosion, overland runoff, and other impacts resulting from a 100-year, 24-hour storm event.

e. This Order expires on **January 31, 2021**, after which, the terms and conditions of this permit are automatically continued pending issuance of a new permit, provided that all requirements of USEPA's NPDES regulations at 40 CFR section 122.6 and the State's regulations at California Code of Regulations title 23, division 3, chapter 9, article 3, section 2235.4 regarding the continuation of expired permits and waste discharge requirements are met.

f. A copy of this Order shall be posted at a prominent location at or near the treatment and disposal facilities and shall be available to operating personnel at all times.

B. Monitoring and Reporting Program (MRP, Attachment E) Requirements

The Discharger shall comply with the MRP in Attachment E and future revisions thereto.

C. Special Provisions

1. Reopener Provisions

a. This Order may be reopened for modification to include an effluent limitation if monitoring establishes that the discharge causes, has the reasonable potential to cause, or contributes to an excursion above an Ocean Plan Table 1 water quality objective. [40 CFR section 122.44(d)(1)]

b. This Order may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

i. Violation of any terms or conditions of this Order. [Water Code section 13381(a)]b]

ii. Obtaining this Order by misrepresentation or failure to disclose fully all relevant facts. [Water Code section 13381(b)]

iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge. [Water Code section 13381(c)]

c. The filing of a request by the Discharger for modifications, revocation and reissuance, or termination of this Order does not stay any condition of this Order. Notification by the Discharger of planned operational or facility changes; or anticipated noncompliance with this Order does not stay any condition of this Order. [40 CFR section 122.41(f)]

d. If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under section 307(a) of the CWA for a toxic pollutant and that

standard or prohibition if more stringent than any limitation on the pollutant in this Order, the San Diego Water Board may institute proceedings under these regulations to modify or revoke and reissue the Order to conform to the toxic effluent standard or prohibition. [40 CFR section 122.4(b)(1)]

e. This Order may be reopened and modified, in accordance with the provisions set forth in 40 CFR parts 122 and 124, to include new Minimum Levels (MLs) which are established in the Ocean Plan. [40 CFR parts 122 and 124]

f. This Order may be re-opened and modified to revise effluent limitations as a result of future amendments to the Basin Plan or the Ocean Plan, or the adoption of a total maximum daily load allocation (TMDL) for the receiving water. [40 CFR section 122.62(a)(2)]

g. This Order may also be re-opened and modified, revoked and, reissued or terminated for cause in accordance with the provisions of 40 CFR sections 122.44, 122.62 to 122.64, and 125.62. Causes for taking such actions include, but are not limited to, failure to comply with any condition of this Order and permit, and endangerment to human health or the environment resulting from the permitted activity.

h. This Order may be re-opened and modified at the San Diego Water Board's discretion in response to a request to allow sewage from the Mesa facility to be routed to the NIA Sewage Treatment Plant once the U.S. Marine Corps takes possession of the Mesa facility.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Toxicity Reduction Requirements

If the effluent limitation for chronic toxicity contained in section IV.A is exceeded, then the Discharger shall:

i. Take all reasonable measures necessary to immediately minimize toxicity; and

ii. Within 15 days from the time the Discharger becomes aware of the exceedance, the Discharger shall conduct six additional toxicity tests within a 12-week period.

If an additional exceedance is detected within the 12-week period, the Discharger shall conduct a Toxicity Reduction Evaluation (TRE) in accordance with the TRE Work Plan developed in accordance with section VI.C.2.b below. The TRE shall include all reasonable steps to identify the source(s) of toxicity. Once the source(s) of toxicity is (are) identified, the Discharger shall take all reasonable steps to reduce the toxicity to meet the chronic toxicity effluent limitation identified in section IV.A.1 of this Order.

Within 30 days of completion of the TRE, the Discharger shall submit the results of the TRE, including a summary of the findings, data generated, a list of corrective actions necessary to achieve consistent compliance with the toxicity effluent limitation contained in this Order, and a time schedule for

implementation of such corrective actions. The corrective actions and time schedule shall be modified at the direction of the San Diego Water Board.

b. Toxicity Reduction Evaluation (TRE)

The Discharger shall develop a TRE Work Plan in accordance with TRE procedures established by the USEPA in the following guidance manuals:

i. *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070);

ii. *Toxicity Identification Evaluation, Phase I* (EPA/600/6-91/005F);

iii. *Methods for Aquatic Toxicity Identification Evaluations, Phase II* (EPA/600/R92/ 080); and

iv. *Methods for Aquatic Toxicity Identification Evaluations, Phase III* (EPA/600/R92/081).

The Discharger shall submit the TRE work plan to the San Diego Water Board within 180 days of the adoption of this Order. The TRE work plan shall be subject to the approval of the San Diego Water Board and shall be modified as directed by the San Diego Water Board.

3. Best Management Practices (BMPs) and Pollution Prevention

a. Best Management Practices Plan

The Discharger shall continue to operate the Facility in accordance with their BMP Plan and in accordance with any subsequent amendments to the BMP Plan due to decommissioning. The Discharger shall maintain their existing BMP Plan in accordance with the USEPA *Guidance Manual for Developing Best Management Practices (BMPs)* (EPA 833-B-93-004) and update the plan whenever there is a change in Facility design, construction, operation, or maintenance, which materially affects the potential for discharge from the Facility of significant amounts of hazardous or toxic pollutants into waters of the U.S.

The BMP Plan and any updates thereto, shall be subject to the approval of the San Diego Water Board and shall be modified as directed by the San Diego Water Board. The Discharger shall submit the BMP Plan and any updates thereto to the San Diego Water Board upon request of the San Diego Water Board. A copy of the up-to-date BMP Plan shall be maintained at the Facility and shall be readily available to operating personnel at all times.

4. Construction, Operation and Maintenance Specifications – Not Applicable

5. Special Provisions for Municipal Facilities (POTWs Only) – Not Applicable

6. Other Special Provisions

a. Once-Through Cooling Policy (OTC Policy)

i. Special Studies

The State Water Board previously required the Discharger to perform special studies specified in section 3.D.(1) of the *Statewide Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling* (OTC Policy). By letter dated January 9, 2015, the State Water Board waived the requirement to perform the special studies given the decision to permanently shut down the Facility and to immediately reduce intake flows by approximately 96 percent.

ii. Large Organism Exclusion Devices (LOEDs)

Also, by letter dated January 9, 2015, the State Water Board determined that the the Discharger is subject to applicable requirements of the OTC Policy regarding LOEDs. The Discharger shall comply with the time schedule set forth below to ensure compliance with the OTC Policy:

Table 11. Schedule of Compliance with Once-Through Cooling (OTC) Policy LOED Requirements

Task	Compliance Date
1. Submit status on OTC compliance for LOED installation at intake structures	January 15, 2016
2. Submit progress report on LOED compliance actions	July 1, 2016
3. Achieve full compliance with LOED requirements	December 31, 2016

iii. Immediate and Interim Requirements. The Discharger shall implement the following actions in compliance with the Ocean Plan:

a) As of October 1, 2011, any unit that is not directly engaged in power-generating activities or critical system maintenance shall cease intake flows unless it has been demonstrated to the State Water Board that a reduced minimum flow is necessary for operations.

b) Commencing on the effective date of this Order, the Discharger shall implement interim measures to mitigate impingement and entrainment impacts until full compliance is achieved, by December 31, 2022. If the Discharger proposes to mitigate impacts by providing funding to the California State Coastal Conservancy (working with the California Ocean Protection Council), such as for mitigation projects directed toward increases in marine life associated with the State's Marine Protected Areas within the local area, the Discharger's mitigation funding shall be based on an amount that is determined by the State Water Board's Chief Deputy Director.

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in section IV of this Order shall be determined as follows:

A. Compliance with 6-Month Median Effluent Limitation

If the median of daily discharges over any 180-day period exceeds the 6-month median effluent limitation for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for each day of that 180-day period for that parameter. The next assessment of compliance will occur after the next sample is taken. If only a single sample is taken during a given 180-day period and the analytical result for that sample exceeds the 6-month median, the Discharger will be considered out of compliance for the 180-day period. For any 180-day period during which no sample is taken, no compliance determination can be made for the 6-month median limitation.

B. Compliance with 30-Day Average Effluent Limitation

If the arithmetic mean of daily discharges over any thirty consecutive day period exceeds the 30-day average effluent limitation, an alleged violation will be flagged and the Discharger will be considered out of compliance for each day of that 30-day period for that parameter. The next assessment of compliance will occur after the next sample is taken. If only a single sample is taken during a given 30-day period and the analytical result for that sample exceeds the 30-day average effluent limitation, the Discharger will be considered out of compliance for the 30-day period. For any 30-day period during which no sample is taken, no compliance determination can be made for the 30-day average effluent limitation.

C. Compliance with Average Monthly Effluent Limitation (AMEL)

If the average of daily discharges over a calendar month exceeds the AMEL for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of noncompliance in a 31-day month). The average of daily discharges over the calendar month that exceeds the AMEL for a parameter will be considered out of compliance for the month only. If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

D. Compliance with Average Weekly Effluent Limitation (AWEL)

If the average of daily discharges over a calendar week (Sunday through Saturday) exceeds the AWEL for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for each day of that week for that parameter, resulting in 7 days of noncompliance. The average of daily discharges over the calendar week that exceeds the AWEL for a parameter will be considered out of compliance for that week only. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Discharger will be considered out of compliance for that calendar week. For any one calendar week

during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

E. Compliance with Maximum Daily Effluent Limitation (MDEL)

The MDEL shall apply to flow weighted 24-hour composite samples, or grab, as specified in the MRP (Attachment E). If a daily discharge exceeds the MDEL for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for that parameter for that one day only within the reporting period. For any one day during which no sample is taken, no compliance determination can be made for that day.

F. Compliance with Instantaneous Maximum Effluent Limitation

The instantaneous maximum effluent concentration limitation shall apply to grab sample determinations. If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, a violation will be flagged and the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are higher than the instantaneous maximum effluent limitation would result in two instances of noncompliance with the instantaneous maximum effluent limitation).

G. Chronic Toxicity

The discharge is subject to determination of “Pass” or “Fail” from chronic toxicity tests using the Test of Significant Toxicity (TST) statistical t-test approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1, and Appendix B, Table B-1. The null hypothesis (Ho) for the TST statistical approach is: Mean discharge Instream Waste Concentration (IWC) response ≤0.75 × Mean control response. A test result that rejects this null hypothesis is reported as “Pass”. A test result that does not reject this null hypothesis is reported as “Fail”. The relative “Percent Effect” at the discharge IWC is defined and reported as: ((Mean control response - Mean discharge IWC response) ÷ Mean control response)) × 100. This is a t-test (formally Student’s t-Test), a statistical analysis comparing two sets of replicate observations - in the case of whole effluent toxicity (WET), only two test concentrations (i.e., a control and IWC). The purpose of this statistical test is to determine if the means of the two sets of observations are different (i.e., if the IWC or receiving water concentration differs from the control (the test result is “Pass” or “Fail”)). The Welch’s t-test employed by the TST statistical approach is an adaptation of Student’s t-test and is used with two samples having unequal variances.

The MDEL for chronic toxicity is exceeded and a violation will be flagged when a chronic toxicity test, analyzed using the TST statistical approach, results in “Fail” and the “Percent Effect” is ≥0.50. The chronic toxicity MDEL is set at the IWC for the discharge (10% effluent) and expressed in units of the TST statistical approach (“Pass” or “Fail”, “Percent Effect”). All NPDES effluent compliance monitoring for the chronic toxicity MDEL shall be reported using the 10% effluent concentration and negative control, expressed in units of the TST. The TST hypothesis (Ho) (see above) is statistically analyzed using the IWC and a negative control. Effluent toxicity tests shall be run using a multi-concentration test design when required by *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater*

Organisms (USEPA 2002, EPA-821-R-02-013). According to the State Water Resources Control Board and the USEPA, the Percent Minimum Significant Difference (PMSD) criteria only apply to compliance reporting for the no observed effect concentration (NOEC) and the sublethal statistical endpoints of the NOEC, and therefore are not used to interpret TST results. Standard Operating Procedures used by the toxicity testing laboratory to identify and report valid, invalid, anomalous, or inconclusive effluent (and receiving water) toxicity test measurement results from the TST statistical approach, including those that incorporate a consideration of concentration-response patterns, must be submitted to the San Diego Water Board (40 CFR section 122.41(h)). The San Diego Water Board will make a final determination as to whether a toxicity test result is valid, and may consult with the Discharger, USEPA, the State Water Board's Quality Assurance Officer, or the State Water Board Division of Drinking Water's (Environmental Laboratory Accreditation Program) as needed. The Board may consider results of any Toxicity Reduction Evaluation / Toxicity Identification Evaluation (TRE/TIE) studies in an enforcement action.

ATTACHMENT A – ABBREVIATIONS AND DEFINITIONS

Part 1. Abbreviations

Abbreviation	Definition
40 CFR	Code of Federal Regulations, title 40
AMEL	Average Monthly Effluent Limitation
AWEL	Average Weekly Effluent Limitation
Basin Plan	Water Quality Control Plan for the San Diego Basin
BAT	Best Available Technology
BMPs	Best Management Practices
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CIWQS	California Integrated Water Quality System
CWA	Clean Water Act
DDT	Dichlorodiphenyltrichloroethane
Discharger	Southern California Edison Company
DMRs	Discharge Monitoring Reports
DNQ	Detected, but Not Quantified
DO	Dissolved Oxygen
°F	Degrees Fahrenheit
Facility	San Onofre Nuclear Generating Station - Units 2 and 3
Ho	Null Hypothesis
IWC	Instream Waste Concentration
lbs/day	Pounds per Day
MDEL	Maximum Daily Effluent Limitation
MDL	Method Detection Limit
MEC	Maximum Effluent Concentration
MER	Mass Emission Rate
MGD	Million Gallons per Day
mg/L	Milligrams per Liter
ML	Minimal Level
MRP	Monitoring and Reporting Program
ND	Not Detected
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Unit
OAL	Office of Administrative Law
Ocean Plan	Water Quality Control Plan - Ocean Waters of California 2012
PCB	Polychlorinated Biphenyls
pCi/L	Picocuries per Liter
POTWs	Publicly-Owned Treatment Works
QA	Quality Assurance
RL	Reporting Level
RMDs	Regulatory Management Decisions
ROWD	Report of Waste Discharge
RPA	Reasonable Potential Analysis
San Diego Water Board	California Regional Water Quality Control Board, San Diego Region
SMR	Self-monitoring Report

Abbreviation	Definition
SOK	San Onofre Kelp Forest
State Water Board	State Water Resources Control Board
TBELs	Technology-Based Effluent Limitations
TIE	Toxicity Identification Evaluation
TMDL	Total Maximum Daily Load
TRE	Toxicity Reduction Evaluation
TSS	Total Suspended Solids
TST	Test of Significant Toxicity
TUc	Chronic Toxicity Unit
µg/L	Micrograms per Liter
USEPA	U.S. Environmental Protection Agency
Water Code	California Water Code
WDRs	Waste Discharge Requirements
WET	Whole Effluent Toxicity
WQBELs	Water Quality-Based Effluent Limitations
WQOs	Water Quality Objectives

Part 2. Definitions of Common Terms

Areas of Special Biological Significance (ASBS)
Those areas designated by the State Water Resources Control Board (State Water Board) as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. All Areas of Special Biological Significance are also classified as a subset of STATE WATER QUALITY PROTECTION AREAS.

Average Monthly Effluent Limitation (AMEL)
The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)
The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Chlordane
Shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

Chronic Toxicity
This parameter shall be used to measure the acceptability of waters for supporting a healthy marine biota until improved methods are developed to evaluate biological response.

Daily Discharge
Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

DDT
Shall mean the sum of 4,4’DDT, 2,4’DDT, 4,4’DDE, 2,4’DDE, 4,4’DDD, and 2,4’DDD.

Degradation
Degradation shall be determined by comparison of the waste field and reference site(s) for characteristic species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undesirable plant and animal species. Degradation occurs if there are significant differences in any of three major biotic groups, namely, demersal fish, benthic invertebrates, or attached algae. Other groups may be evaluated where benthic species are not affected, or are not the only ones affected.

Detected, but Not Quantified (DNQ)
Sample results that are less than the reported Minimum Level, but greater than or equal to the laboratory's Method Detection Limit. Sample results reported as DNQ are estimated concentrations.

Dichlorobenzenes
Shall mean the sum of 1,2- and 1,3-dichlorobenzene.

Downstream Ocean Waters
Shall mean waters downstream with respect to ocean currents.

Dredged Material
Any material excavated or dredged from the navigable waters of the U.S., including material otherwise referred to as "spoil."

Endosulfan
Shall mean the sum of endosulfan-alpha and -beta and endosulfan sulfate.

Flow-weighted Composite Sample
The flow rate for each individual wastewater is determined for that day, and the relative amount/volume, in percent, of each individual waste stream in the total flow for that day is determined. Using the percentages of each individual waste stream in the total, the amount of each individual waste stream, to be composited in a five-gallon (18,927 mLs) sample, is calculated. In the example below, on the day of sample collection, condenser overboard flow accounts for 69 percent of the total flow of the low-volume wastewaters that are sampled. 69 percent of five gallons equals 0.69 x 18,927 milliliters, which equals 13,060 milliliters. (There are 3,785 mLs per gallon and 18,927 mLs per five gallons.)

Low-volume Wastewater	Flow in MGD	Percent of Total Flow	mLs to be Composited
Condenser Overboard	6.5	69	13,060
Makeup Demineralizer System	0.58	6	1,136
Radwaste System	0.25	3	568
Steam Generator Blowdown	0.43	5	946
Polishing Demineralizer System	1.5	16	3,028
Concrete Cutting Colling Water	0.1	1	189
Total:	9.45	100 %	18,927 mLs

Halomethanes
Shall mean the sum of bromoform, bromomethane (methyl bromide) and chloromethane (methyl chloride).

HCH
Shall mean the sum of the alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

Initial Dilution
Shall mean the process that results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

For shallow water submerged discharges, surface discharges, and non-buoyant discharges, characteristic of cooling water wastes and some individual discharges, turbulent mixing results primarily from the momentum of discharge. Initial dilution, in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the San Diego Water Board whichever results in the lower estimate for initial dilution.

Instantaneous Maximum Effluent Limitation
The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instream Waste Concentration
Shall mean the concentration of a toxicant or effluent in the receiving water after mixing (the inverse of the dilution factor). A discharge of 100 percent effluent will be considered the as IWC whenever mixing zones or dilution credits are not authorized by the applicable Water Board.

Kelp Beds
For purposes of the bacteriological standards of the Ocean Plan, are significant aggregations of marine algae of the genera Macrocystis and Nereocystis. Kelp beds include the total foliage canopy of Macrocystis and Nereocystis plants throughout the water column.

Mariculture
Shall mean the culture of plants and animals in marine waters independent of any pollution source.

Material
In common usage: (1) the substance or substances of which a thing is made or composed (2) substantial;

For purposes of the Ocean Plan relating to waste disposal, dredging and the disposal of dredged material and fill, material means matter of any kind or description which is subject to regulation as waste, or any material dredged from the navigable waters of the U.S. See also, dredged material.

Maximum Daily Effluent Limitation (MDEL)
Shall mean the highest allowable daily discharge of a pollutant.

Method Detection Limit (MDL)
The minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR part 136, Attachment B.

Minimum Level (ML)
Shall mean the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Natural Light
Reduction of natural light may be determined by the San Diego Water Board by measurement of light transmissivity or total irradiance, or both, according to the monitoring needs of the San Diego Water Board.

Not Detected (ND)
Those sample results less than the laboratory's MDL.

Ocean Waters
The territorial marine waters of the state as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. If a discharge outside the territorial waters of the state could affect the quality of the waters of the state, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters.

PAHs (polynuclear aromatic hydrocarbons)
Shall mean the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

PCBs (polychlorinated biphenyls)
Shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

Reported Minimum Level
The reported ML (also known as the Reporting Level or RL) is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the ML's included in this Order, including an additional factor if applicable as discussed herein. The ML's included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the San Diego Water Board either from Appendix II of the Ocean Plan in accordance with section III.C.5.a. of the Ocean Plan or established in accordance with section III.C.5.b. of the Ocean Plan. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the reported ML.

Shellfish
Organisms identified by the California Department of Health Services as shellfish for public health purposes (i.e., mussels, clams and oysters).

Significant Difference
Defined as a statistically significant difference in the means of two distributions of sampling results at the 95 percent confidence level.

Six-Month Median Effluent Limitation
The highest allowable moving median of all daily discharges for any 180-day period.

TCDD Equivalents
The sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below.

Isomer Group	Toxicity Equivalence Factor
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8 tetra CDF	0.1
1,2,3,7,8 penta CDF	0.05
2,3,4,7,8 penta CDF	0.5
2,3,7,8 hexa CDFs	0.1
2,3,7,8 hepta CDFs	0.01
octa CDF	0.001

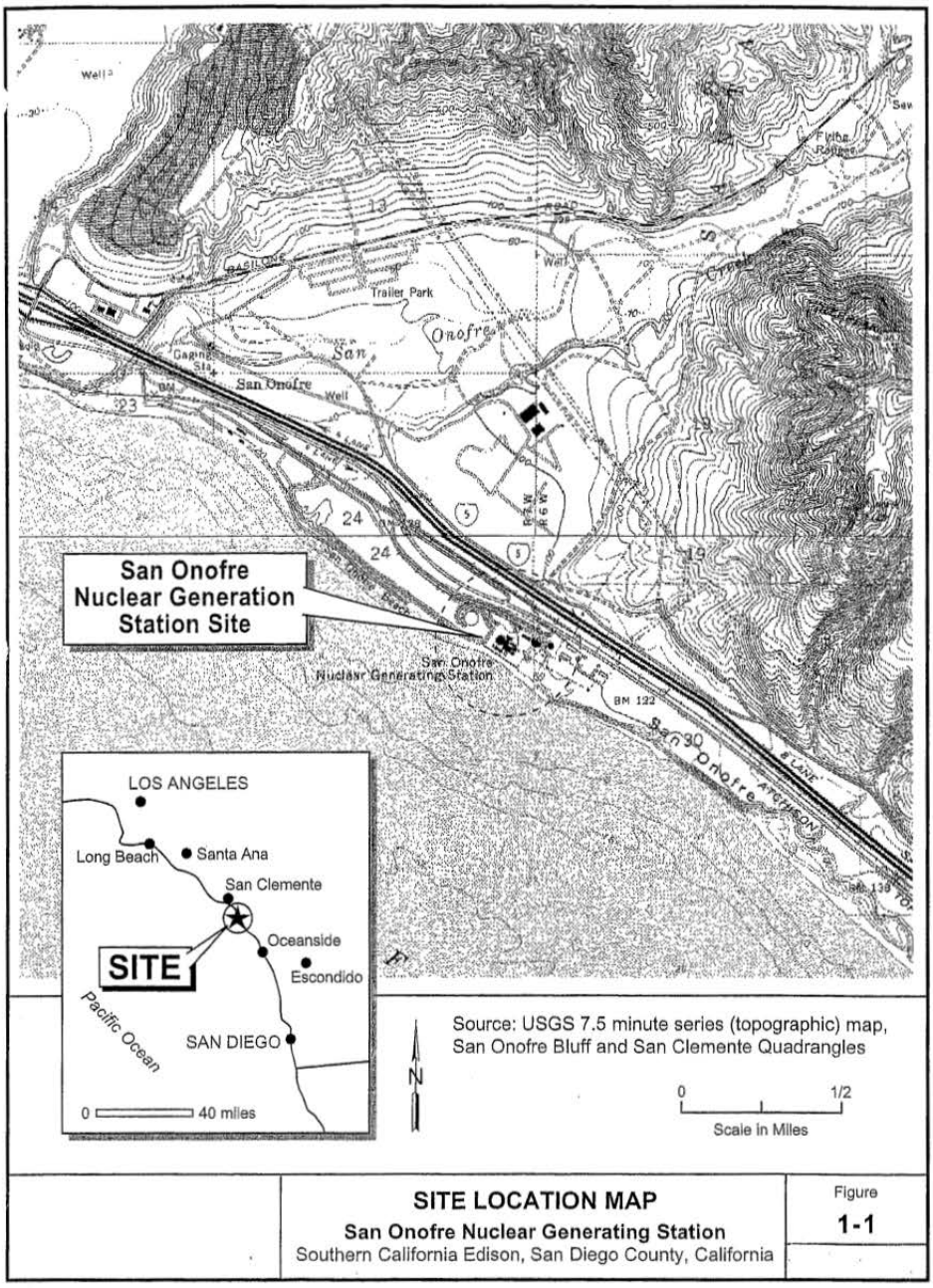
Test of Significant Toxicity (TST)
A statistical approach used to analyze toxicity test data. The TST incorporates a restated null hypothesis, Welch's t-test, and biological effect thresholds for chronic and acute toxicity.

Toxicity Reduction Evaluation (TRE)
A study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

Waste
As used in the Ocean Plan, waste includes a Discharger's total discharge, of whatever origin, i.e., gross, not net, discharge.

ATTACHMENT B – MAPS

B.1 Location Map



SITE LOCATION MAP
San Onofre Nuclear Generating Station
Southern California Edison, San Diego County, California

Figure
1-1

B.2 Site Map

San Onofre Nuclear Generating Station

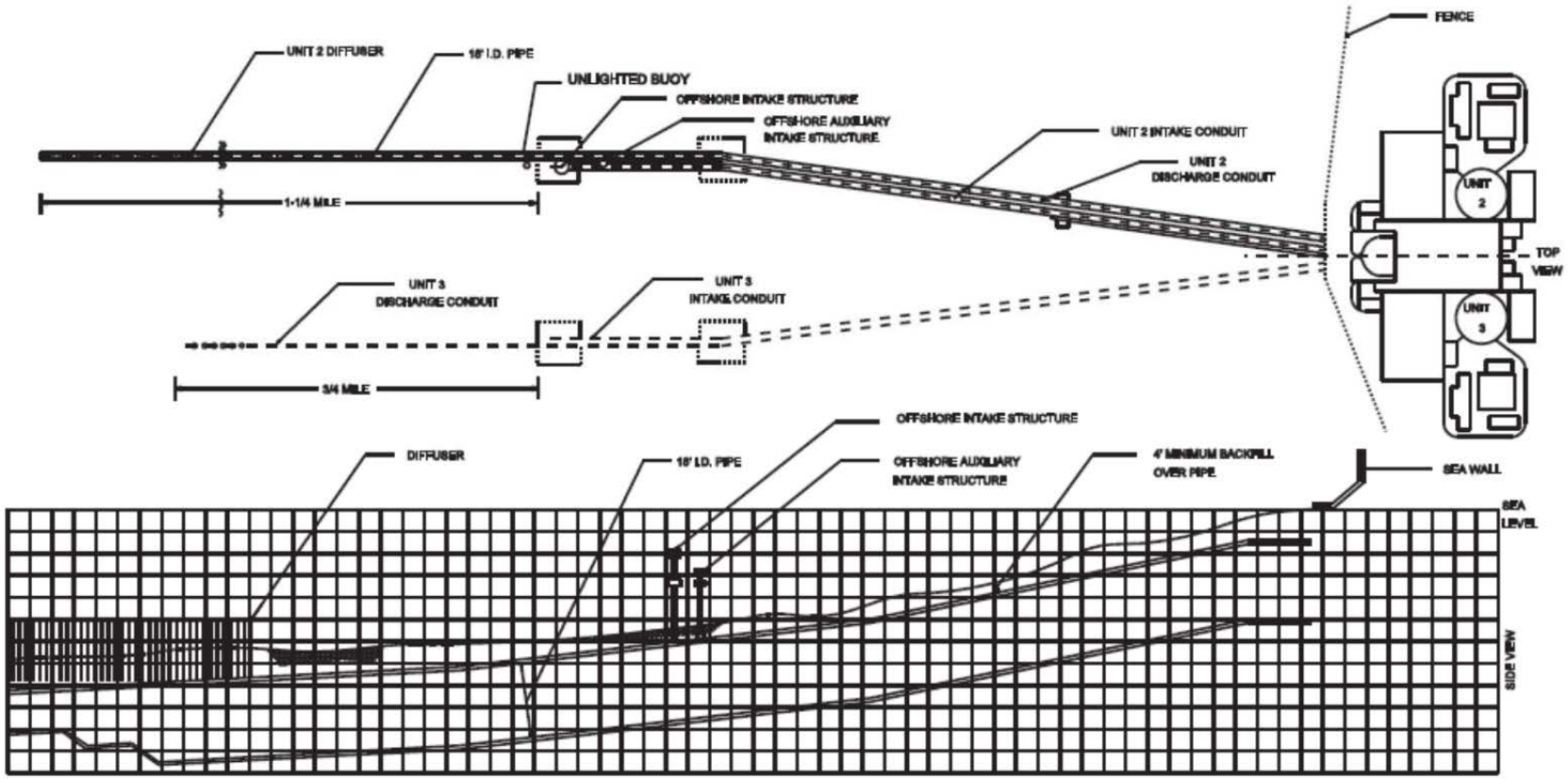
Southern California Edison

Aerial Site Map

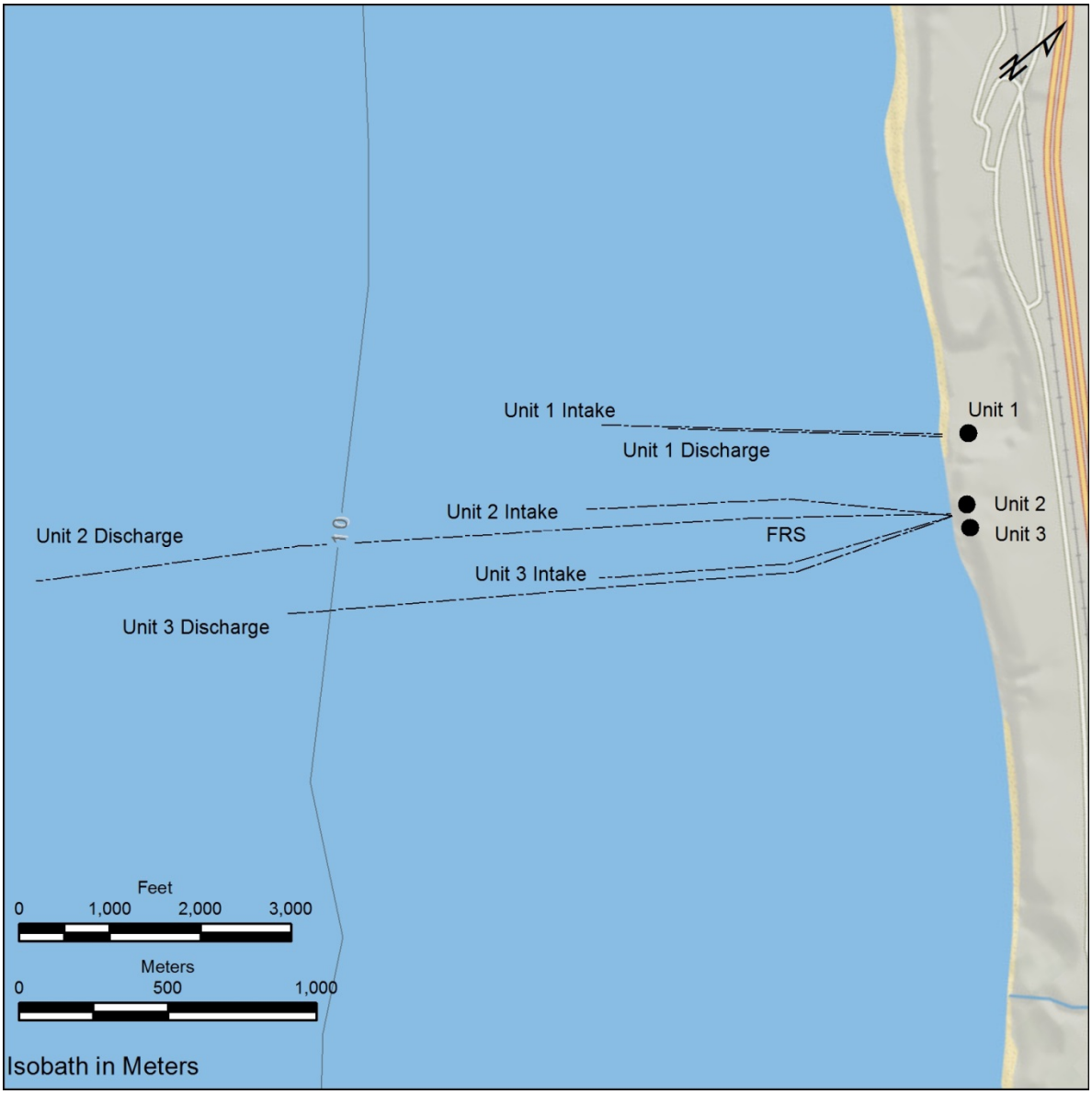
Not to Scale

Aerial from Google Earth (Imagery Date: 04/27/2014)

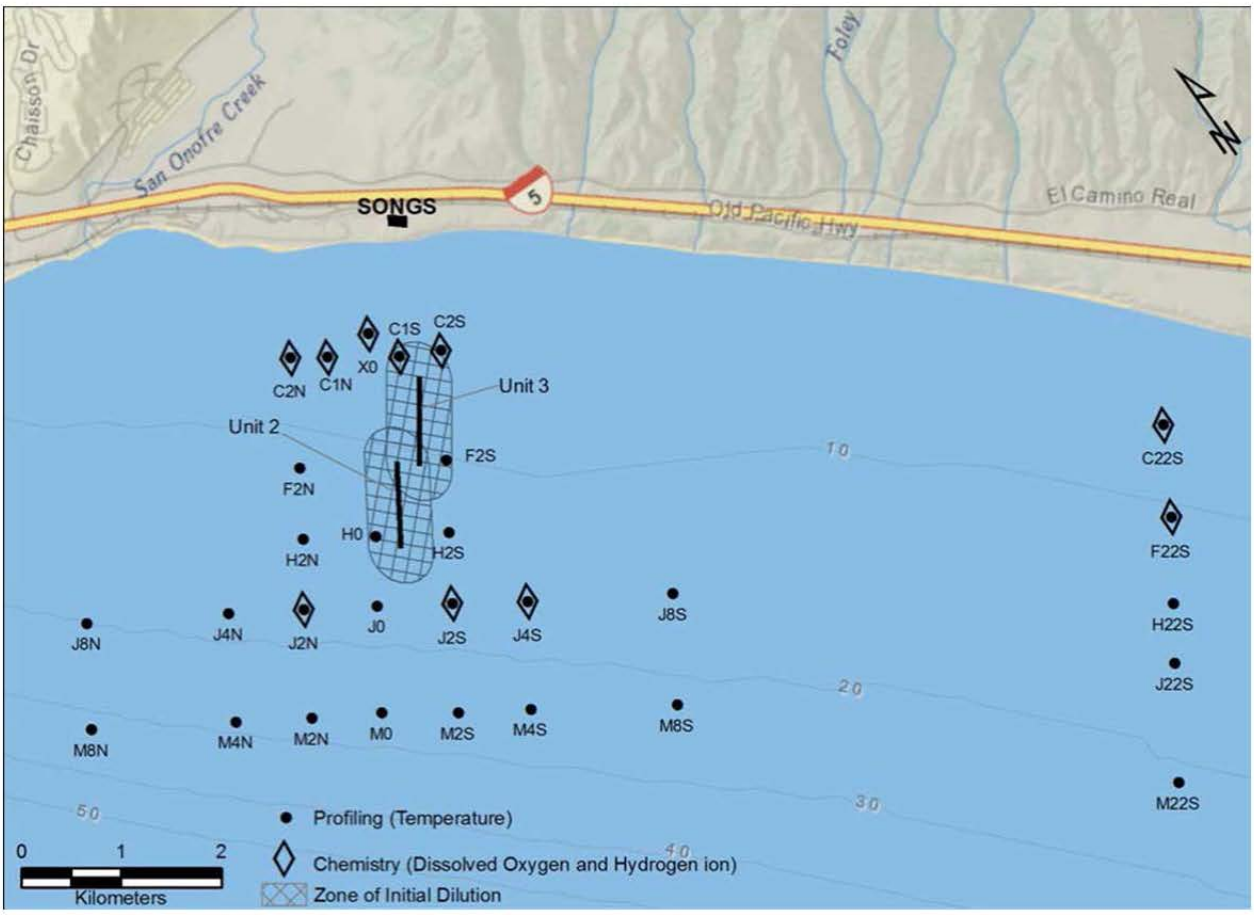
B.3 Offshore Intake and Discharge Structures



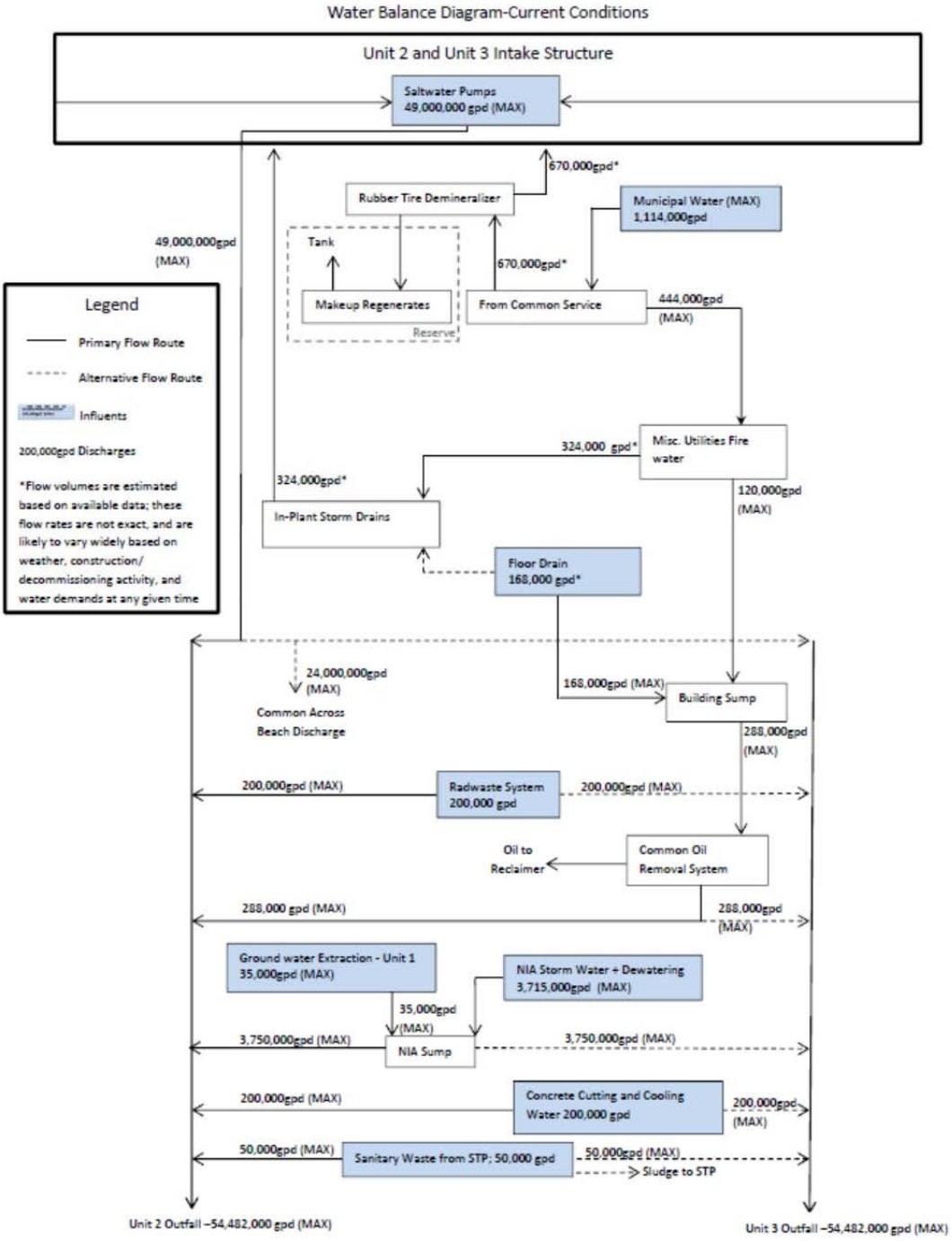
B.4 Offshore Structure Diagram



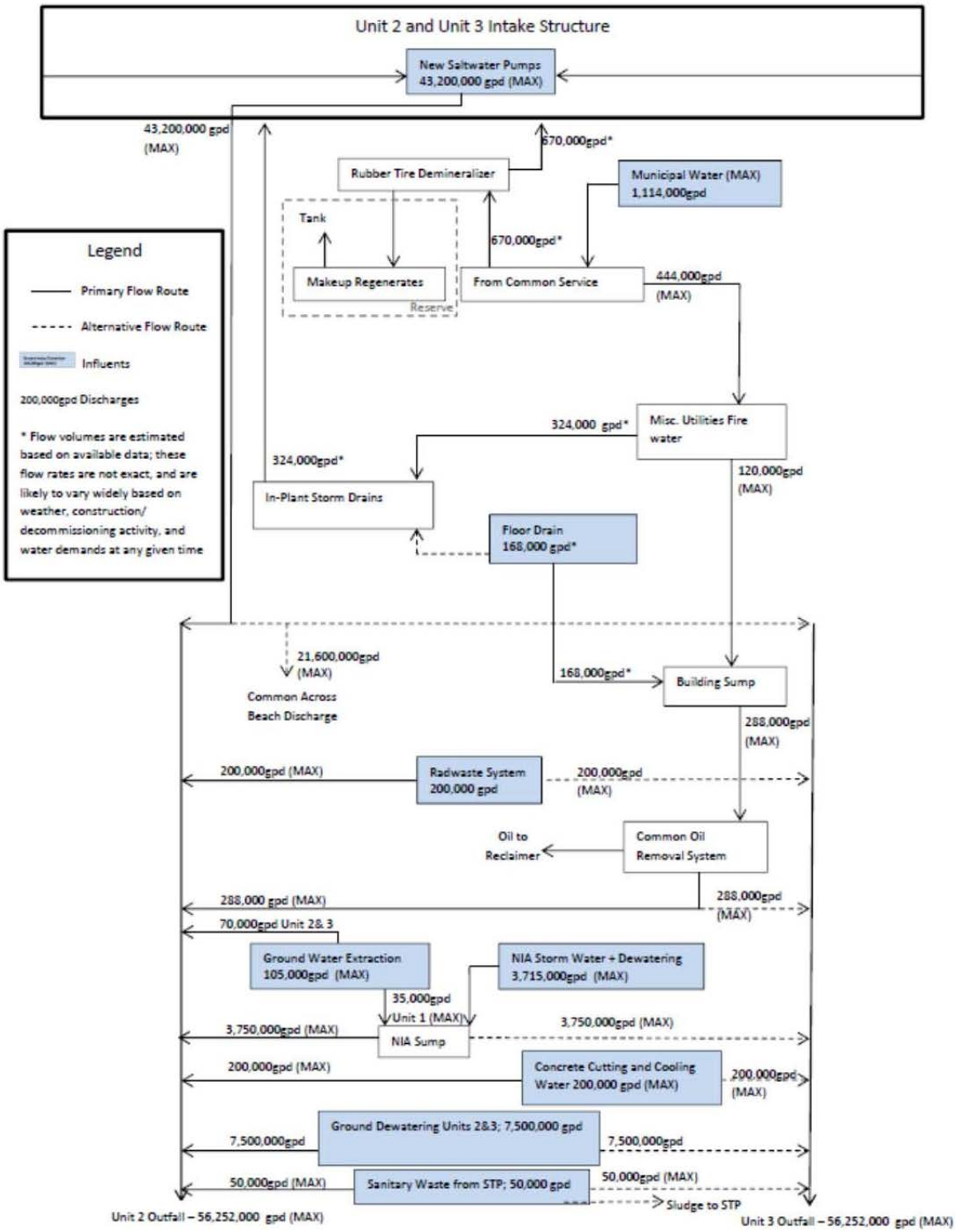
B.5 Receiving Waters Monitoring Stations



ATTACHMENT C – FLOW SCHEMATIC



Water Balance Diagram-Future Conditions



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (Water Code) and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (Code of Federal Regulations, title 40 (40 CFR) section 122.41(a); Water Code sections 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)

The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 CFR section 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 CFR section 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 CFR section 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 CFR section 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 CFR section 122.41(g).)
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 CFR section 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the San Diego Water Board, State Water Board, USEPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (33 U.S.C. section 1318(a)(4)(b); 40 CFR section 122.41(i); Water Code, sections 13267, 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C. section 1318(a)(4)(b)(i); 40 CFR section 122.41(i)(1); Water Code, sections 13267, 13383);

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. section 1318(a)(4)(b)(ii); 40 CFR section 122.41(i)(2); Water Code, sections 13267, 13383);

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C. section 1318(a)(4)(b)(ii); 40 CFR section 122.41(i)(3); Water Code, sections 13267, 13383); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C. section 1318(a)(4)(b); 40 CFR section 122.41(i)(4); Water Code, sections 13267, 13383.)

G. Bypass

1. Definitions

a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR section 122.41(m)(1)(i).)

b. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR section 122.41(m)(1)(ii).)

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 CFR section 122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the San Diego Water Board may take enforcement action against a Discharger for bypass, unless (40 CFR section 122.41(m)(4)(i)):

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR section 122.41(m)(4)(i)(A));

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering

judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR section 122.41(m)(4)(i)(B)); and

c. The Discharger submitted notice to the San Diego Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR section 122.41(m)(4)(i)(C).)

4. The San Diego Water Board may approve an anticipated bypass, after considering its adverse effects, if the San Diego Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 CFR section 122.41(m)(4)(ii).)

5. Notice

a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 CFR section 122.41(m)(3)(i).)

b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 CFR section 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 CFR section 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 CFR section 122.41(n)(2).)

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 CFR section 122.41(n)(3)):

a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 CFR section 122.41(n)(3)(i));

b. The permitted facility was, at the time, being properly operated (40 CFR section 122.41(n)(3)(ii));

c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 CFR section 122.41(n)(3)(iii)); and

d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 CFR section 122.41(n)(3)(iv).)

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 CFR section 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 CFR section 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 CFR section 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the San Diego Water Board. The San Diego Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 CFR sections 122.41(l)(3), 122.61.)

III. STANDARD PROVISIONS – MONITORING

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 CFR section 122.41(j)(1).)

A. Monitoring results must be conducted according to test procedures approved under 40 CFR part 136 for the analyses of pollutants unless another method is required under 40 CFR subchapters N or O. In the case of pollutants for which there are no approved methods under 40 CFR part 136 or otherwise required under 40 CFR subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order for such pollutants. (40 CFR sections 122.41(j)(4), 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the San Diego Water Board Executive Officer at any time. (40 CFR section 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 CFR section 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 CFR section 122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 CFR section 122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 CFR section 122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 CFR section 122.41(j)(3)(v)); and

6. The results of such analyses. (40 CFR section 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 CFR section 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 CFR section 122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 CFR section 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the San Diego Water Board, State Water Board, or USEPA within a reasonable time, any information which the San Diego Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the San Diego Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 CFR section 122.41(h); Water Code, sections 13267, 13383.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the San Diego Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 CFR section 122.41(k).)

2. All permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 CFR section 122.22(a)(1).)

3. All reports required by this Order and other information requested by the San Diego Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 CFR section 122.22(b)(1));

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus

be either a named individual or any individual occupying a named position.) (40 CFR section 122.22(b)(2)); and

c. The written authorization is submitted to the San Diego Water Board and State Water Board. (40 CFR section 122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the San Diego Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR section 122.22(c).)

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 CFR section 122.22(d).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 CFR section 122.41(l)(4).)

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the San Diego Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 CFR section 122.41(l)(4)(i).)

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the San Diego Water Board. (40 CFR section 122.41(l)(4)(ii).)

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 CFR section 122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 CFR section 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be

provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR section 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 CFR section 122.41(l)(6)(ii)):

a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR section 122.41(l)(6)(ii)(A).)

b. Any upset that exceeds any effluent limitation in this Order. (40 CFR section 122.41(l)(6)(ii)(B).)

3. The San Diego Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 CFR section 122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the San Diego Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 CFR section 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 CFR section 122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 CFR section 122.41(l)(1)(ii).)

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR section 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the San Diego Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order’s requirements. (40 CFR section 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 CFR section 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the San Diego Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 CFR section 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

The San Diego Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13268, 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the San Diego Water Board as soon as they know or have reason to believe (40 CFR section 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 CFR section 122.42(a)(1)):

a. 100 micrograms per liter (µg/L) (40 CFR section 122.42(a)(1)(i));

b. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 CFR section 122.42(a)(1)(ii));

c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 CFR section 122.42(a)(1)(iii)); or

d. The level established by the San Diego Water Board in accordance with section 122.44(f). (40 CFR section 122.42(a)(1)(iv).)

2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following “notification levels" (40 CFR section 122.42(a)(2)):

a. 500 micrograms per liter (µg/L) (40 CFR section 122.42(a)(2)(i));

b. 1 milligram per liter (mg/L) for antimony (40 CFR section 122.42(a)(2)(ii));

c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 CFR section 122.42(a)(2)(iii)); or

d. The level established by the San Diego Water Board in accordance with section 122.44(f). (40 CFR section 122.42(a)(2)(iv).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

Section 308 of the federal Clean Water Act (CWA) and sections 122.41(h), (j)-(l), 122.44(i), and 122.48 of the Code of Federal Regulations, title 40 (40 CFR) require that all National Pollutant Discharge Elimination System (NPDES) permits specify monitoring and reporting requirements. California Water Code (Water Code) sections 13267 and 13383 also authorize the San Diego Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. Pursuant to this authority, this Monitoring and Reporting Program (MRP) establishes conditions for the Discharger to conduct routine or episodic self-monitoring of the discharges regulated under this Order at specified influent, internal, effluent, and receiving water monitoring locations. The MRP requires the Discharger to report the results to the San Diego Water Board with information necessary to evaluate discharge characteristics and compliance status.

The purposes of the MRP are to determine and ensure compliance with effluent limitations and other requirements established in this Order, to assess treatment efficiency, to characterize effluents, and to characterize the receiving water and the effects of the discharge on the receiving water. The MRP also specifies requirements concerning the proper use, maintenance, and installation of monitoring equipment and methods, and the monitoring type intervals and frequency necessary to yield data that are representative of the activities and discharges regulated under this Order.

Each monitoring section contains an introductory paragraph summarizing why the monitoring is needed and the key management questions the monitoring is designed to answer. In developing the list of key management questions the San Diego Water Board considered four basic types of information for each question:

(1) Management Information Need – Why does the San Diego Water Board need to know the answer?

(2) Monitoring Criteria – What monitoring will be conducted for deriving an answer to the question?

(3) Expected Product – How should the answer be expressed and reported?

(4) Possible Management Actions – What actions will be potentially influenced by the answer?

The framework for this monitoring program has three components that comprise a range of spatial and temporal scales: (1) core monitoring, (2) regional monitoring, and (3) special studies.

(1) Core monitoring consists of the basic site-specific monitoring necessary to measure compliance with individual effluent limits and/or impacts to receiving water quality. Core monitoring is typically conducted in the immediate vicinity of the discharge by examining local scale spatial effects.

(2) Regional monitoring provides information necessary to make assessments over large areas and serves to evaluate cumulative effects of all anthropogenic inputs. Regional monitoring data also assists in the interpretation of core monitoring studies. In the event that a regional monitoring effort takes place during the permit cycle in which the MRP does not specifically address regional monitoring, the San Diego Water Board may allow relief from aspects of core monitoring components in order to encourage participation pursuant to section V of this MRP.

(3) Special studies are directed monitoring efforts designed in response to specific management or research questions identified through either core or regional monitoring programs. Often they are used to help understand core or regional monitoring results,

where a specific environmental process is not well understood, or to address unique issues of local importance.

Pursuant to Water Code sections 13267 and 13383, this MRP establishes monitoring, reporting, and recordkeeping requirements that implement the federal and California laws and/or regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitoring discharge. All samples shall be taken at the monitoring points specified and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the San Diego Water Board. Samples shall be collected at times representative of "worst case" conditions with respect to compliance with the requirements of this Order.

B. Appropriate flow measurement devices and/or engineering methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurement is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ±10 percent from true discharge rates throughout the range of expected discharge volumes.

C. Monitoring must be conducted according to U.S. Environmental Protection Agency (USEPA) test procedures approved at 40 CFR part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act*, as amended, or unless other test procedures are specified in this Order and/or in this MRP and/or by the San Diego Water Board.

D. Laboratories analyzing monitoring samples shall be certified by the State Water Board's Division of Drinking Water (DDW) or by a laboratory approved by the San Diego Water Board, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports. The laboratory must be accredited under the DDW Environmental Laboratory Accreditation Program (ELAP) to ensure the quality of analytical data used for regulatory purposes to meet the requirements of this Order. Additional information on ELAP can be accessed at: http://www.waterboards.ca.gov/drinking_water/certlic/labs/index.shtml

E. Records of monitoring information shall include information required under Standard Provision (Attachment D), section IV.

F. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices.

G. The Discharger shall have, and implement, an acceptable written quality assurance (QA) plan for laboratory analyses. Duplicate chemical analyses must be conducted on a minimum of 10 percent of the samples. A similar frequency shall be maintained for analyzing spiked samples. When requested by USEPA or the San Diego Water Board, the Discharger will participate in the NPDES discharge monitoring report QA performance study. The Discharger should have a success rate equal or greater than 80 percent.

H. Analysis for toxic pollutants, including chronic toxicity, with performance goals or effluent limitations shall be conducted in accordance with procedures stated in the Ocean Plan and this MRP.

I. The Discharger shall ensure that the results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Resources Control Board at the following address:

State Water Board Quality Assurance Program Officer
Office of Information Management and Analysis
State Water Resources Control Board
1001 I Street, Sacramento, CA 95814

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
Influent		
--	INF-001-A	A location where a representative sample of the NIA Sewage Treatment Plant Influent can be obtained.
--	INF-002	A location where a representative sample of the saltwater pump intake for Unit 2 can be obtained. (Previously INF-2-Cool)
--	INF-003	A location where a representative sample of the saltwater pump intake for Unit 3 can be obtained. (Previously INF-3-Cool)
NIA Internal Waste streams Routed to Discharge Point 002 or 003		
001-A	INT-001-A	A location where a representative sample of the NIA Sewage Treatment Plant Effluent can be obtained.
001-E	INT-001-E	A location where a representative sample of the NIA Yard Drains (sump) flow can be obtained.
001-F	INT-001-F	A location where a representative sample of the NIA Dewatering flow can be obtained.
Unit 2 Internal Waste Streams Routed to Discharge Point 002 or 003		
--	INT-002	Aliquot of all in-plant low-volume wastewater discharges for Unit 2. Unit 2 combined discharge monitoring shall be conducted at a point before all in-plant and/or low-volume waste streams enter the cooling water stream.
002-A	INT-002-A	A location where a representative sample of the Metal Cleaning Wastes (chemical and non-chemical) can be obtained.
002-D	INT-002-D	A location where a representative sample of the Rubber Tire Demineralizer can be obtained.
002-E	INT-002-E	A location where a representative sample of the Radwaste System can be obtained.
002-J	INT-002-J	A location where a representative sample of the Intake Structure Sump can be obtained.
002-K	INT-002-K	A location where a representative sample of the Concrete Cutting Water can be obtained.

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
002-L	INT-002-L	A location where a representative sample of the Common Oil Removal System can be obtained.
002-M	INT-002-M	A location where a representative sample of the Dewatering can be obtained.
Unit 3 Internal Waste Streams Routed to Discharge Point 002 or 003		
--	INT-003	Aliquot of all in-plant low-volume wastewater discharges for Unit 3. Unit 3 combined discharge monitoring shall be conducted at a point before all in-plant and/or low-volume waste streams enter the cooling water stream.
003-A	INT-003-A	A location where a representative sample of the Chemical Metal Cleaning Wastes (chemical and non-chemical) can be obtained.
003-D	INT-003-D	A location where a representative sample of the Rubber Tire Demineralizer can be obtained.
003-E	INT-003-E	A location where a representative sample of the Radwaste System can be obtained.
003-J	INT-003-J	A location where a representative sample of the Intake Structure Sump can be obtained.
003-K	INT-003-K	A location where a representative sample of the Concrete Cutting Water can be obtained.
003-L	INT-003-L	A location where a representative sample of the Common Oil Removal System can be obtained.
003-M	INT-003-M	A location where a representative sample of the Dewatering can be obtained.
Effluent to the Pacific Ocean		
002	EFF-002	A location where a representative sample of the Combined Discharge to Discharge Point No. 002 can be obtained. Latitude 33° 20' 55.84" North, Longitude 117° 34' 13.5" West
003	EFF-003	A location where a representative sample of the Combined Discharge to Discharge Point No. 002 can be obtained. Latitude 33º 21' 11.74" North, Longitude117º 33' 51.61" West
Receiving Water		
--	Receiving Water	All receiving water samples shall be collected at monitoring stations as shown in Attachment B.

The North latitude and West longitude information in Table E-1 are approximate for administrative purposes.

III. CORE MONITORING REQUIREMENTS

A. Influent Monitoring Requirements

Influent monitoring is the collection and analysis of samples or measurements of wastewater prior to the treatment processes. Influent monitoring is required at the NIA Sewage Treatment Plant to address the following questions:

(1) Is the influent inhibiting or disrupting treatment processes or operations?

(2) Is the Facility complying with permit conditions, including but not limited to total suspended solids (TSS) percent removal limitations?

1. Monitoring Location INF-001-A – NIA Sewage Treatment Plant

The Discharger shall monitor the NIA Sewage Treatment Plant influent at INF-001-A as follows:

Table E-2. Influent Monitoring – NIA Sewage Treatment Plant

Parameter	Units	Sample Type	Minimum Sampling Frequency
Total Suspended Solids	mg/L	Grab	Monthly

B. Effluent Monitoring Requirements

Effluent monitoring is the collection and analysis of samples or measurements of effluents, after all treatment processes, to determine and quantify contaminants and to demonstrate compliance with applicable effluent limitations, standards, and other requirements of this Order.

Effluent monitoring is necessary to address the following questions:

(1) Does the effluent comply with permit effluent limitations and other requirements of this Order, thereby ensuring that water quality standards are achieved in the receiving water?

(2) What is the mass of constituents that are discharged daily, monthly, or annually?

(3) Is the effluent concentration or mass changing over time?

(4) Is the Facility being properly operated and maintained to ensure compliance with the conditions of the Order?

1. Monitoring Location 001-A – NIA Sewage Treatment Plant (Internal Outfall 001-A)

The Discharger shall monitor NIA Sewage Treatment Plant effluent at Internal Outfall 001-A (at monitoring location INT-001-A) as follows:

Table E-3. Effluent Monitoring – NIA Sewage Treatment Plant Effluent

Parameter[1]	Units	Sample Type	Minimum Sampling Frequency	Reporting Frequency
Flow (Average and Daily Maximum)	MGD	meter or estimate	Daily	Monthly
Oil and Grease	mg/L, lbs/day	Grab	Monthly	Monthly
Total Suspended Solids	mg/L	Grab	Monthly	Monthly
pH	s.u.	Grab	Monthly	Monthly
Settleable Solids	ml/L	Grab	Monthly	Monthly
Turbidity	NTUs	Grab	Monthly	Monthly

[1] Required analytical test methods and minimum levels, as required under 40 CFR part 136, minimum levels (MLs) are specified in Appendix II of the Ocean Plan. The Discharger shall select MLs that are below the effluent limitation or performance goal. If no ML value is below the effluent limitation or performance goal, the Discharger shall select the lowest ML value and its associated analytical method.

2. Monitoring Location – Chemical and Non-Chemical Metal Cleaning Wastes from Unit 2 (INT-002-A) and Unit 3 (INT-003-A).

The Discharger shall monitor Chemical and Non-Chemical Metal Cleaning Wastes at Unit 2 (INT-002-A) and Unit 3 (INT-003-A) as follows:

Table E-4. Effluent Monitoring – Chemical and Non-Chemical Metal Cleaning Wastes

Parameter[1]	Units	Sample Type	Minimum Sampling Frequency	Reporting Frequency[2]
Total Suspended Solids	mg/L, lbs/day	Grab	Prior to discharge	Quarterly
Oil and Grease	mg/L, lbs/day	Grab	Prior to discharge	Quarterly
Iron, Total Recoverable	mg/L, lbs/day	Grab	Prior to discharge	Quarterly
Copper, Total Recoverable	mg/L, lbs/day	Grab	Prior to discharge	Quarterly

[1] Required analytical test methods and minimum levels, as required under 40 CFR part 136, MLs are specified in Appendix II of the Ocean Plan. The Discharger shall select MLs that are below the effluent limitation or performance goal. If no ML value is below the effluent limitation or performance goal, the Discharger shall select the lowest ML value and its associated analytical method.

[2] After the initial discharge of metal cleaning wastes, monitoring shall be weekly, if the discharge continues. Monitoring results shall be summarized and included in the next quarterly monitoring report, which covers the 3-month period in which the discharge occurred.

3. Combined Low-Volume, Miscellaneous Discharges (INT-001-E, INT-001-F, INT-002-D, INT-002-E, INT-002-J, INT-002-K, INT-002-L, INT-002-M, INT-003-D, INT-003-E, INT-003-J, INT-003-K, INT-003-L, and INT-003-M)

For the purposes of monitoring, the following wastewaters are considered low-volume, miscellaneous discharges: tire demineralizer wastewater, radwaste system wastewater, water draining to plant drains, intake structure sump water, concrete cutting water, oil removal system wastewater, and dewatering.

Table E-5. Low-Volume, Miscellaneous Discharges Descriptions

INT-001-E	Yard Drains
INT-001-F	Dewatering
INT-002-D / INT-003-D	Makeup Demineralizer (mobile)
INT-002-E / INT-003-E	Radwaste System[1]
INT-002-J / INT-003-J	Intake Structure Sump
INT-002-K / INT-002-K	Concrete Cutting Water (mobile)
INT-002-L / INT-003-L	Common Oil Removal System
INT-002-M / INT-003-M	Dewatering

The flow rate used to determine the proportion of each waste stream in the composited sample shall be the actual (preferred) or estimated flow rate for the day on which samples are collected.

Mass emissions (lbs/day) are calculated by the following equation. The flow rate used for calculation shall be the flow rate of the individual waste stream at the time of sampling.

[1] The discharge of licensed radioactive material is regulated by the Nuclear Regulatory Commission (NRC), pursuant to the Atomic Energy Act. More information is available in the Fact Sheet (Attachment F) section III.E.3.

lbs/day = 8.34 x Ce x Q where:

Ce = the effluent concentration limit, mg/l

Q = flow rate, million gallons per day (MGD)

Reported values should result from individual grab samples of in-plant waste streams that are collected and composited on a flow-weighted basis. Measurements or estimates of flows of individual waste streams used as a basis for compositing shall be reported as well as the names of all waste streams sampled.

A composite sample shall be created from as many individual low-volume wastewaters as possible. Individual low-volume wastewaters that account for no flow on the day of sample collection would, however, not be included in a composite sample. The composite sample representing combined low-volume, in-plant wastewaters from Units 1, 2, and 3 shall be analyzed for the following constituents and shall comply with the following analysis and reporting frequency: Monitoring Parameters and Reporting Frequency for Combined Low-Volume, Miscellaneous Discharges from Units 1, 2 and 3.

The Discharger shall monitor Combined Low-volume, Miscellaneous Discharges at NIA (INT-001-E and INT-001-F), Unit 2 (INT-002-D, INT-002-E, INT-002-J, INT-002-K, INT-002-L, and INT-002-M), and Unit 3 (INT-003-D, INT-003-E, INT-003-J, INT-003-K, INT-003-L, and INT-003-M) and report aliquot as INT-001 (NIA), INT-002 (Unit 2) and INT-003 (Unit 3) as follows:

Table E-6. Effluent Monitoring – Combined Low-Volume, Miscellaneous Discharges

Parameter[1]	Units	Sample Type	Minimum Sampling Frequency[2,3]	Reporting Frequency
TSS	mg/L, lbs/day	Flow Weighted Composite	Annually	Annually
Oil and Grease	mg/L, lbs/day	Flow Weighted Composite	Annually	Annually
pH	s.u.	Flow Weighted Composite	Annually	Annually
Ocean Plan Table 1 Parameters for Protection of Marine Aquatic Life				
Arsenic	lbs/day	Flow Weighted Composite	Annually	Annually
Cadmium, Total Recoverable	lbs/day	Flow Weighted Composite	Annually	Annually
Chromium VI, Total Recoverable[4]	lbs/day	Flow Weighted Composite	Annually	Annually
Copper, Total Recoverable	lbs/day	Flow Weighted Composite	Annually	Annually
Lead, Total Recoverable	lbs/day	Flow Weighted Composite	Annually	Annually
Mercury, Total Recoverable	lbs/day	Flow Weighted Composite	Annually	Annually
Nickel, Total Recoverable	lbs/day	Flow Weighted Composite	Annually	Annually
Selenium, Total Recoverable	lbs/day	Flow Weighted Composite	Annually	Annually
Silver, Total Recoverable	lbs/day	Flow Weighted Composite	Annually	Annually

Parameter[1]	Units	Sample Type	Minimum Sampling Frequency[2,3]	Reporting Frequency
Zinc, Total Recoverable	lbs/day	Flow Weighted Composite	Annually	Annually
Cyanide, Total (as CN) [5]	lbs/day	Flow Weighted Composite	Annually	Annually
Ammonia (expressed as nitrogen)	lbs/day	Flow Weighted Composite	Annually	Annually
Phenolic compounds[6] (non-chlorinated)	lbs/day	Flow Weighted Composite	Annually	Annually
Chlorinated phenolics[7]	lbs/day	Flow Weighted Composite	Annually	Annually
Endosulfan[8]	lbs/day	Flow Weighted Composite	Annually	Annually
Endrin	lbs/day	Flow Weighted Composite	Annually	Annually
HCH[9]	lbs/day	Flow Weighted Composite	Annually	Annually
Ocean Plan Table 1 Parameters for Protection of Human Health - Noncarcinogens				
Acrolein	lbs/day	Flow Weighted Composite	Annually	Annually
Antimony	lbs/day	Flow Weighted Composite	Annually	Annually
Bis(2-chloroethoxy)methane	lbs/day	Flow Weighted Composite	Annually	Annually
Bis(2-chloroisopropyl)ether	lbs/day	Flow Weighted Composite	Annually	Annually
Chlorobenzene	lbs/day	Flow Weighted Composite	Annually	Annually
Chromium (III)	lbs/day	Flow Weighted Composite	Annually	Annually
di-n-butyl phthalate	lbs/day	Flow Weighted Composite	Annually	Annually
Dichlorobenzenes[10]	lbs/day	Flow Weighted Composite	Annually	Annually
Diethyl phthalate	lbs/day	Flow Weighted Composite	Annually	Annually
Dimethyl phthalate	lbs/day	Flow Weighted Composite	Annually	Annually
4,6-Dinitro-2-methylphenol	lbs/day	Flow Weighted Composite	Annually	Annually
2,4-Dinitrophenol	lbs/day	Flow Weighted Composite	Annually	Annually
Ethylbenzene	lbs/day	Flow Weighted Composite	Annually	Annually
Fluoranthene	lbs/day	Flow Weighted Composite	Annually	Annually
Hexachlorocyclopentadiene	lbs/day	Flow Weighted Composite	Annually	Annually
Nitrobenzene	lbs/day	Flow Weighted Composite	Annually	Annually

Parameter[1]	Units	Sample Type	Minimum Sampling Frequency[2,3]	Reporting Frequency
Thallium	lbs/day	Flow Weighted Composite	Annually	Annually
Toluene	lbs/day	Flow Weighted Composite	Annually	Annually
Tributyltin	lbs/day	Flow Weighted Composite	Annually	Annually
1,1,1-Trichloroethane	lbs/day	Flow Weighted Composite	Annually	Annually
Ocean Plan Table 1 Parameters for Protection of Human Health - Carcinogens				
Acrylonitrile	lbs/day	Flow Weighted Composite	Annually	Annually
Aldrin	lbs/day	Flow Weighted Composite	Annually	Annually
Benzene	lbs/day	Flow Weighted Composite	Annually	Annually
Benzidine	lbs/day	Flow Weighted Composite	Annually	Annually
Beryllium	lbs/day	Flow Weighted Composite	Annually	Annually
Bis(2-chloroethyl)ether	lbs/day	Flow Weighted Composite	Annually	Annually
Bis(2-ethylhexyl)phthalate	lbs/day	Flow Weighted Composite	Annually	Annually
Carbon tetrachloride	lbs/day	Flow Weighted Composite	Annually	Annually
Chlordane[11]	lbs/day	Flow Weighted Composite	Annually	Annually
Chlorodibromomethane	lbs/day	Flow Weighted Composite	Annually	Annually
Chloroform	lbs/day	Flow Weighted Composite	Annually	Annually
DDT[12]	lbs/day	Flow Weighted Composite	Annually	Annually
1,4-Dichlorobenzene	lbs/day	Flow Weighted Composite	Annually	Annually
3-3'-Dichlorobenzidine	lbs/day	Flow Weighted Composite	Annually	Annually
1,2-Dichloroethane	lbs/day	Flow Weighted Composite	Annually	Annually
1,1-Dichloroethylene	lbs/day	Flow Weighted Composite	Annually	Annually
Dichlorobromomethane	lbs/day	Flow Weighted Composite	Annually	Annually
Dichloromethane	lbs/day	Flow Weighted Composite	Annually	Annually
1,3-Dichloropropene	lbs/day	Flow Weighted Composite	Annually	Annually
Dieldrin	lbs/day	Flow Weighted Composite	Annually	Annually

Parameter[1]	Units	Sample Type	Minimum Sampling Frequency[2,3]	Reporting Frequency
2,4-Dinitrotoluene	lbs/day	Flow Weighted Composite	Annually	Annually
1,2-Diphenylhydrazine	lbs/day	Flow Weighted Composite	Annually	Annually
Halomethanes[13]	lbs/day	Flow Weighted Composite	Annually	Annually
Heptachlor	lbs/day	Flow Weighted Composite	Annually	Annually
Heptachlor epoxide	lbs/day	Flow Weighted Composite	Annually	Annually
Hexachlorobenzene	lbs/day	Flow Weighted Composite	Annually	Annually
Hexachlorobutadiene	lbs/day	Flow Weighted Composite	Annually	Annually
Hexachloroethane	lbs/day	Flow Weighted Composite	Annually	Annually
Isophorone	lbs/day	Flow Weighted Composite	Annually	Annually
N-Nitrosodimethylamine	lbs/day	Flow Weighted Composite	Annually	Annually
N-Nitrosodi-n-propylamine	lbs/day	Flow Weighted Composite	Annually	Annually
N-Nitrosodiphenylamine	lbs/day	Flow Weighted Composite	Annually	Annually
PAH[14]	lbs/day	Flow Weighted Composite	Annually	Annually
PCB[15]	lbs/day	Flow Weighted Composite	Annually	Annually
TCDD Equivalents[16]	lbs/day	Flow Weighted Composite	Annually	Annually
1,1,2,2-Tetrachloroethane	lbs/day	Flow Weighted Composite	Annually	Annually
Tetrachloroethylene	lbs/day	Flow Weighted Composite	Annually	Annually
Toxaphene	lbs/day	Flow Weighted Composite	Annually	Annually
Trichloroethylene	lbs/day	Flow Weighted Composite	Annually	Annually
1,1,2-Trichloroethane	lbs/day	Flow Weighted Composite	Annually	Annually
2,4,6-Trichlorophenol	lbs/day	Flow Weighted Composite	Annually	Annually
Vinyl Chloride	lbs/day	Flow Weighted Composite	Annually	Annually

1 Required analytical rest methods and minimum levels as required under 40 CFR part 136, minimum levels are specified in Appendix II of the Ocean Plan. The Discharger shall select minimum levels that are below the effluent limitation or performance goal. If no minimum level value is below the effluent limitation or performance goal, the Discharger shall select the lowest minimum level value and its associated analytical method.

2 The Discharger shall calculate and report the mass emission rate (MER) of the constituent for each sample taken. The MER shall be calculated in accordance with this Order.

[3] The minimum frequency of monitoring for this constituent is automatically increased to twice the minimum frequency specified, if any analysis for this constituent yields a result higher than the applicable effluent limitation specified in this Order. The increased minimum frequency of monitoring shall remain in effect until the results of a minimum of four consecutive analyses for this constituent are below all applicable effluent limitations specified in this Order.

[4] Dischargers may, at their option, apply this effluent limitation as a total chromium effluent limitation.

[5] If a Discharger can demonstrate to the satisfaction of USEPA and the State Water Board that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations may be evaluated with the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR part 136.

[6] Non-chlorinated phenolic compounds represent the sum of 2,4-dimethylphenol, 4,6-Dinitro-2-methylphenol, 2,4-dinitrophenol, 2-methylphenol, 4-methylphenol, 2-Nitrophenol, 4-nitrophenol, and phenol.

[7] Chlorinated phenolic compounds represent the sum of 4-chloro-3-methylphenol, 2-chlorophenol, pentachlorophenol, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol.

[8] Endosulfan represents the sum of alpha-endosulfan, beta-endosulfan, and endosulfan sulfate.

[9] HCH (hexachlorocyclohexane) represents the sum of the alpha, beta, gamma (Lindane), and delta isomers of hexachlorocyclohexane.

[10] Dichlorobenzenes represent the sum of 1,2- and 1,3-dichlorobenzene.

[11] Chlordane shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma nonachlor-alpha, nonachlor-gamma, and oxychlordane.

[12] DDT represents the sum of 4,4'DDT; 2,4'DDT; 4,4'DDE; 2,4'DDE; 4,4'DDD; and 2,4'DDD.

[13] Halomethanes represent the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

[14] PAHs (polynuclear aromatic hydrocarbons) represent the sum of acenapthalene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo[k]fluoranthene; 1,12-benzoperylene; benzo[a]pyrene; chrysene; dibenzo[a,h]anthracene; fluorene; indeno[1,2,3-cd]pyrene; phenanthrene; and pyrene.

[15] PCBs (polychlorinated biphenyls) represent the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Arolclor-1254, and Arcolor-1260.

[16] TCDD equivalents represent the sum of concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown by the table below. USEPA Method 8280 may be used to analyze TCDD equivalents.

Isomer Group	Toxicity Equivalence Factor
2,3,7,8 – tetra CDD	1.0
2,3,7,8 – penta CDD	0.5
2,3,7,8 – hexa CDD	0.1
2,3,7,8 – hepta CDD	0.01
octa CDD	0.001
2,3,7,8 – tetra CDF	0.1
1,2,3,7,8 – penta CDF	0.05
2,3,4,7,8 – penta CDF	0.5
2,3,7,8 – hexa CDFs	0.1
2,3,7,8 – hepta CDFs	0.01
Octa CDF	0.001

4. Monitoring Location – Individual, Low-volume, Miscellaneous Discharges from NIA (001-E and INT-001-F), Unit 2 (INT-002-D, INT-002-E, INT-002-J, INT-002-K, INT-002-L, and INT-002-M), and Unit 3 (INT-003-D, INT-003-E, INT-003-J, INT-003-K, INT-003-L, and INT-003-M)

For the purposes of monitoring, the following wastewaters are considered low-volume miscellaneous discharges from Unit 2 and 3: makeup demineralizer, radwaste system,

intake structure sump, concrete cutting water, common oil removal system, and dewatering.

For the purposes of monitoring, the following wastewaters are considered low-volume wastewaters from the NIA: yard drains, and dewatering.

Table E-7. Low-Volume, Miscellaneous Wastewaters Descriptions

INT-001-E	Yard Drains
INT-001-F	Dewatering
INT-002-D / INT-003-D	Makeup Demineralizer (mobile)
INT-002-E / INT-003-E	Radwaste System
INT-002-J / INT-003-J	Intake Structure Sump
INT-002-K / INT-002-K	Concrete Cutting Water (mobile)
INT-002-L / INT-003-L	Common Oil Removal System
INT-002-M / INT-003-M	Dewatering

The Discharger shall monitor Individual, low-volume, miscellaneous discharges at NIA (001-E and 001-F), Unit 2 (002-D, 002-E, 002-J, 002-K, 002-L, and 002-M), and Unit 3 (003-D, 003-E, 003-J, 003-K, 003-L, and 003-M), with compliance measured at Monitoring Locations NIA (INT-001-E and INT-001-F), Unit 2 (INT-002-D, INT-002-E, INT-002-J, INT-002-K, INT-002-L, and INT-002-M), and Unit 3 (INT-003-D, INT-003-E, INT-003-J, INT-003-K, INT-003-L, and INT-003-M) as specified in the table below:

Table E-8. Effluent Monitoring – Individual, Low-volume, Miscellaneous Discharges

Parameter[1]	Units	Sample Type	Minimum Sampling Frequency	Reporting Frequency
Flow (Average and Daily Maximum)	MGD	Meter or estimate	Continuous	Monthly
TSS	mg/L, lbs/day	Grab	Monthly	Monthly
Oil and Grease	mg/L, lbs/day	Grab	Monthly	Monthly

[1] Required analytical test methods and minimum levels, as required under 40 CFR Part 136, minimum levels are specified in Appendix II of the Ocean Plan. The Discharger shall select minimum levels that are below the effluent limitation or performance goal. If no minimum level value is below the effluent limitation or performance goal, the Discharger shall select the lowest minimum level value and its associated analytical method.

5. Discharge Points No. 002 and 003 (EFF-002 and EFF-003)

The Discharger shall monitor the discharge from Discharge Points No. 002 and 003 at Monitoring Locations EFF-002 and EFF-003, respectively, as follows. If no effluent is discharged during the reporting period, the Discharger shall report that a sample was not taken due to the lack of flow.

Table E-9. Discharge Point Nos. 002 and 003

Parameter[1]	Units	Sample Type	Minimum Sampling Frequency	Reporting
Flow (Average and Maximum Daily)	MGD	Recorder/ Totalizer	Continuous	Monthly
Temperature (Average and Maximum Daily)	ºF	Grab	Once every 2 Hours[8]	Monthly
Total Residual Chlorine	mg/L	Grab	1/week[7]	Monthly
Turbidity	NTU	Grab	Monthly	Monthly
pH	standard units	Grab	Monthly	Monthly
Chronic Toxicity	pass/fail	Composite	Quarterly	Quarterly
Arsenic, Total Recoverable	µg/L	Grab	Semiannually	Semiannually
Cadmium, Total Recoverable	µg/L	Grab	Semiannually	Semiannually
Chromium VI, Total Recoverable	µg/L	Grab	Semiannually	Semiannually
Copper, Total Recoverable	µg/L	Grab	Semiannually	Semiannually
Lead, Total Recoverable	µg/L	Grab	Semiannually	Semiannually
Mercury, Total Recoverable	µg/L	Grab	Semiannually	Semiannually
Nickel, Total Recoverable	µg/L	Grab	Semiannually	Semiannually
Selenium, Total Recoverable	µg/L	Grab	Semiannually	Semiannually
Silver, Total Recoverable	µg/L	Grab	Semiannually	Semiannually
Zinc, Total Recoverable	µg/L	Grab	Semiannually	Semiannually
Cyanide, Total (as CN)[2]	µg/L	Grab	Semiannually	Semiannually
Ammonia, Un-ionized (as Nitrogen)	mg/L	Grab	Semiannually	Semiannually
Phenolic compounds[3] (non-chlorinated)	µg/L	Grab	Semiannually	Semiannually
Chlorinated phenolics[4]	µg/L	Grab	Semiannually	Semiannually
Endosulfan5	µg/L	Grab	Semiannually	Semiannually
Endrin	µg/L	Grab	Semiannually	Semiannually
HCH[6]	µg/L	Grab	Semiannually	Semiannually

1 As required under 40 CFR part 136, minimum levels are specified in Appendix II of the Ocean Plan. The Discharger shall select MLs that are below the effluent limitation. If no ML value is below the effluent limitation, the Discharger shall select the lowest ML value and its associated analytical method.

2 If a Discharger can demonstrate to the satisfaction of USEPA and the State Water Board that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations may be evaluated with the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR part 136.

3 Non-chlorinated phenolic compounds represent the sum of 2,4-dimethylphenol, 4,6-Dinitro-2-methylphenol, 2,4-dinitrophenol, 2-methylphenol, 4-methylphenol, 2-Nitrophenol, 4-nitrophenol, and phenol.

4 Chlorinated phenolic compounds represent the sum of 4-chloro-3-methylphenol, 2-chlorophenol, pentachlorophenol, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol.

5 Endosulfan represents the sum of alpha-endosulfan, beta-endosulfan, and endosulfan sulfate.

6 HCH (hexachlorocyclohexane) represents the sum of the alpha, beta, gamma (Lindane), and delta isomers of hexachlorocyclohexane.

7 Monitoring for Total Residual Chlorine is only required if the Facility is chlorinating their discharge.

[8] When cooling water is no longer required for Facility operations and subject to written concurrence by the San Diego Water Board, the frequency of effluent monitoring for temperature may be reduced from once every 2 hours to weekly.

C. Whole Effluent Toxicity (WET) Testing Requirements

Whole effluent toxicity (WET) refers to the overall aggregate toxic effect of an effluent measured directly by an aquatic toxicity test(s). The control of WET is one approach this Order uses to control the discharge of toxic pollutants. WET tests evaluate the 1) aggregate toxic effects of all chemicals in the effluent including additive, synergistic, or antagonistic toxicity effects; 2) the toxicity effects of unmeasured chemicals in the effluent; and 3) variability in bioavailability of the chemicals in the effluent.

Monitoring to assess the overall toxicity of the effluent is required to answer the following questions:

(1) Does the effluent comply with permit effluent limitations for toxicity thereby ensuring that water quality standards are achieved in the receiving water?

(2) If the effluent does not comply with permit effluent limitations for toxicity, are unmeasured pollutants causing risk to aquatic life?

(3) If the effluent does not comply with permit effluent limitations for toxicity, are pollutants in combinations causing risk to aquatic life?

1. Monitoring Frequency for Chronic Toxicity

The Discharger shall conduct chronic toxicity monitoring at the frequencies specified in Table E-9.

2. Marine and Estuarine Species and Test Methods

The Discharger shall conduct a species sensitivity screening for chronic toxicity on a representative sample which shall include one vertebrate, one invertebrate, and one aquatic plant during the first required monitoring period. The species sensitivity screening samples shall also be analyzed for the parameters required for the discharge. The test species that exhibits the highest percent effect at the Instream Waste Concentration (IWC) during a species sensitivity screening (i.e. the most sensitive species) shall be utilized for routine monitoring during the permit cycle. Routine toxicity test design shall, at a minimum, include analysis of the IWC compared to a control.

The Discharger shall follow the methods for chronic toxicity tests as established in 40 CFR section 136.3. The USEPA method manuals referenced therein include *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition* (EPA-821-R-02-013), and *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Third Edition* (EPA-821-R-02-014). Additional methods for chronic toxicity monitoring are outlined in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, First Edition* (EPA-600-R-95-136).

For discharges to marine and estuarine waters, the Discharger shall conduct a static renewal toxicity test with the topsmelt, *Atherinops affinis* (Larval Survival and Growth Test Method 1006.01); a static non-renewal toxicity test with the giant kelp, *Macrocystis pyrifera* (Germination and Growth Test Method 1009.0); and a static non-renewal toxicity

test with the purple sea urchin, *Strongylocentrotus purpuratus*, or the sand dollar, *Dendraster excentricus* (Fertilization Test Method 1008.0).

If laboratory-held cultures of the topsmelt, *Atherinops affinis*, are not available for testing, then the Discharger shall conduct a static renewal toxicity test with the inland silverside, *Menidia beryllina* (Larval Survival and Growth Test Method 1006.01), found in the third edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms* (EPA/821/R-02/014, 2002; Table IA, 40 CFR part 136). Additional species may be used by the Discharger if approved by the San Diego Water Board.

All toxicity tests shall be conducted as soon as possible following sample collection. The 36-hour sample holding time for test initiation shall be targeted. However, no more than 72 hours shall elapse before the conclusion of sample collection and test initiation.

3. Compliance Determination

The MDEL for chronic toxicity is exceeded and a violation will be flagged when a toxicity test during routine monitoring results in a “fail” in accordance with the TST approach and the percent effect is greater than or equal to 50%.

The determination of “pass” or “fail” from a chronic toxicity test at the IWC of 10 percent effluent shall be determined using the TST approach described in the *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010).

The Discharger shall report the results of reasonable potential analyses, species sensitivity screenings, and routine toxicity tests to the San Diego Water Board as either a “pass” or a “fail” at the IWC, in accordance with the TST approach and provide the calculated percent effect at the IWC. The methodology for determining “pass”, “fail”, and “percent effect” is provided below.

Pass

A chronic toxicity test result that rejects the null hypothesis (Ho) below is reported as “pass” in accordance with the TST approach:

Ho: Mean response (10 percent effluent) ≤ 0.75 × Control mean response

Fail

A chronic toxicity test result that does not reject the null hypothesis (Ho) above is reported as “fail” in accordance with the TST approach.

Percent Effect

The percent effect at the IWC is calculated for each chronic toxicity test result using the following equation:

$$\%\ \text{Effect at IWC} = \frac{\text{Mean Control Response - Mean IWC Response} * 100}{\text{Mean Control Response}}$$

4. Chronic Toxicity MDEL Exceedance Follow-up Action

A chronic toxicity test result during routine monitoring indicating a “fail” with a percent effect at or above 50% is an exceedance of the chronic toxicity MDEL. The Discharger shall implement corrective action to abate the source of the toxicity within 24 hours from the time the Discharger becomes aware of an MDEL exceedance, if the source of toxicity

is known (e.g. operational upset). The Discharger shall also conduct an additional toxicity test during the next discharge event after receiving results of an exceedance.

5. Accelerated Chronic Toxicity Testing Monitoring Schedule

When the follow-up chronic toxicity test results in a "fail", the Discharger shall implement an accelerated chronic toxicity monitoring schedule of six times, every other week for 12 weeks. If all of the additional tests result in a "pass" or a "fail" at a percent effect less than 25%, the Discharger may return to routine monitoring for the following monitoring period. If any one of the additional tests result in a "fail" and exhibit a percent effect equal to or greater than 25%, the Discharger shall implement an approved TRE Work Plan as set forth below in section III.C.7 of this MRP. The requirement for a TRE may be waived by the San Diego Water Board on a case-by-case basis if implementation of a previously approved TRE Work Plan is already underway for the sampled discharge point.

6. Quality Assurance

Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual previously referenced. Additional requirements are specified below.

a. This discharge is subject to a determination of "pass" or "fail" from a toxicity test at the IWC (for statistical flowchart and procedures, see *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document*, Appendix A, Figure A-1). The chronic IWC for applicable discharges is 10 percent effluent.

b. Effluent dilution water and control water should be prepared and used as specified in the test methods manual *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012, 2002); or, for *Atherinops affinis, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995). If the dilution water is different from test organism culture water, then a second control using culture water shall also be used.

c. If organisms are not cultured in-house, then concurrent testing with a reference toxicant shall be conducted. If organisms are cultured in-house, then monthly reference toxicant testing is sufficient. Reference toxicant tests and effluent toxicity tests shall be conducted using the same test conditions (e.g., same test duration, etc.).

d. All multi-concentration reference toxicant test results must be reviewed and reported according to USEPA guidance on the evaluation of concentration-response relationships found in Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR part 136) (EPA 821-B-00-004, 2000).

e. If either the reference toxicant or effluent toxicity tests do not meet all test acceptability criteria in the test methods manual, then the Discharger shall resample and retest within 14 days (or as soon as possible for storm water).

7. Toxicity Reduction Evaluation (TRE)

a. TRE Work Plan Submittal. The Discharger shall prepare and submit a TRE Work Plan to the San Diego Water Board no later than 30 days from the time the Discharger becomes aware of a chronic toxicity test results in a "fail" and exhibit a percent effect greater than or equal to 25% during accelerated monitoring.

b. **TRE Work Plan**. The TRE Work Plan shall be in conformance with the USEPA manual *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (EPA/600/2-88/070, 1989).* The TRE Work Plan shall also include the following information:

i. A description of the actions to be undertaken by the Discharger to investigate, identify, and correct the causes of toxicity;

ii. If the MDEL noncompliance has not been corrected, the amount of time it is expected to continue;

iii. A description of the steps taken or planned to reduce, eliminate, and prevent recurrence of the MDEL noncompliance; and

iv. A schedule for completion of all activities and submission of a final report.

c. **TRE Work Plan Implementation**. The Discharger shall implement the TRE Work Plan unless otherwise directed in writing by the San Diego Water Board. The Discharger shall comply with any additional conditions set by the San Diego Water Board.

d. **TRE Progress Reports**. The Discharger shall prepare and provide written semiannual progress reports that (1) describe the actions that have been taken toward achieving compliance with the chronic toxicity MDEL for the previous six months; (2) describe all activities including, data collection and other field activities which are scheduled for the next year and provide other information relating to the progress of work; (3) identify any modifications to the compliance plans that the Discharger proposed to the San Diego Water Board or that have been approved by San Diego Water Board during the previous six months; and (4) include information regarding all delays encountered or anticipated that may affect the future schedule for completion of the actions required to attain compliance with the MDEL, and a description of all efforts made to mitigate those delays or anticipated delays. These progress reports shall be submitted to the San Diego Water Board semiannually by February 1 and August 1 each year following the adoption of this Order in accordance with the reporting schedule in Table E-12. Submission of these progress reports shall continue until compliance with the MDEL is achieved.

e. **Toxicity Identification Evaluation (TIE).** Based upon the magnitude and persistence of the chronic toxicity, the Discharger may initiate a TIE as part of a TRE to identify the causes of toxicity using the same species and test method and, as guidance, EPA manuals: *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures* (EPA/600/6-91/003, 1991); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993); and *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96-054, 1996). If a TIE is undertaken, the Discharger shall prepare and submit a work plan to the San Diego Water Board containing the following elements and comply with any conditions set by the Board:

i. Criteria for initiating a TIE on a sample;

ii. Roles and responsibilities of the team conducting the TIE;

iii. Study design, sample treatments, and chemical analysis;

iv. Data evaluation and communication;

v. Follow-up actions; and

vi. A schedule for completion of all activities and submission of a final report.

8. Violations

An exceedance of the MDEL during routine monitoring is a violation. Any exceedances occurring during a required accelerated monitoring period and, if appropriate, a TRE period shall not constitute additional violations provided that (1) the Discharger proceeds with the accelerated monitoring and TRE (if required) in a timely manner; and (2) the accelerated monitoring and TRE are completed within one year of the initial exceedance. The San Diego Water Board has the discretion to impose additional violations and initiate an enforcement action for toxicity tests that result in a "fail" after one year from the initial violation. Additionally, the Discharger's failure to initiate an accelerated monitoring schedule or conduct a TRE, as required by this Order, will result in all exceedances being considered violations of the MDEL and may result in the initiation of an enforcement action.

9. Reporting of Toxicity Monitoring Results

The Self-Monitoring Report (SMR) shall include a full laboratory report for each toxicity test. This report shall be prepared using the format and content of the test methods manual chapter called Report Preparation, and shall include:

a. The valid toxicity test results for the TST statistical approach, reported as "Pass" or "Fail" and "Percent Effect" at the chronic toxicity IWC for the discharge. All toxicity test results (whether identified as valid or otherwise) conducted during the calendar month shall be reported on the SMR due date specified in Table E-12.

b. The actual test endpoint responses for the control (i.e., the control mean) and the IWC (i.e., the IWC mean) for each toxicity test to facilitate the review of test results and determination of reasonable potential for toxicity by the permitting authority. All toxicity test results (whether identified as valid or otherwise) shall be submitted.

c. Summary water quality measurements for each toxicity test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, chlorine, ammonia).

d. The dates of sample collection and initiation of each toxicity test and all results for effluent parameters monitored concurrently with the toxicity test(s).

e. The statistical analysis used in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010) Appendix A, Figure A-1 and Table A-1, and Appendix B, Table B-1.

f. TRE/TIE results, the San Diego Water Board shall be notified no later than 30 days from completion of each aspect of TRE/TIE analyses. Prior to the completion of the final TIE/TRE report, the Discharger shall provide status updates in the monthly monitoring reports, indicating which TIE/TRE steps are underway and which steps have been completed.

g. Statistical program (e.g., TST calculator, CETIS, etc.) output results, including graphical plots, for each toxicity test.

h. Graphical plots clearly showing the laboratory's performance for the reference toxicant for the previous 20 tests and the laboratory's performance for the control mean, control standard deviation, and control coefficient of variation for the previous 12-month period.

i. Any additional QA/QC documentation or any additional chronic toxicity-related information, upon written request from the San Diego Water Board.

D. Land Discharge Monitoring Requirements – Not Applicable

E. Recycling Monitoring Requirements – Not Applicable

IV. RECEIVING WATER MONITORING REQUIREMENTS

The receiving water and sediment monitoring requirements set forth below are designed to measure the effects of the discharge on the receiving ocean waters. The overall receiving water monitoring program is intended to answer the following questions:

(1) Does the receiving water meet water quality standards?

(2) Are the receiving water conditions getting better or worse over time?

(3) What is the relative contribution of the Facility discharge to pollution in the receiving water?

Receiving water monitoring shall be conducted as specified below. Station location, sampling, sample preservation, and analysis, when not specified by this MRP, shall be by methods described in the Discharger's previous annual report, *Marine Environmental Analysis and Interpretation, San Onofre Nuclear Generating Station, 2013 Annual Report,* submitted to the San Diego Water Board in July 2014. The Discharger may also submit a list of and rationale for any reductions or other changes to these monitoring requirements that it considers to be appropriate to the San Diego Water Board for approval. The receiving water monitoring requirements may be modified by the San Diego Water Board at any time.

A. Continuous Temperature Monitoring

Continuously recording thermographs will be employed at Stations C2S, F2S, and C22S (see Attachment B). Measurements will be obtained from the surface, 5 m, 10 m and near-bottom. Measurements will be reported as hourly data.

B. Turbidity

Quarterly aerial photographic surveys will be conducted in the area of the Units 2 and 3 diffuser systems. The aerial overflights may be merged with the kelp overflights required in section IV.D.

C. Trawling Surveys

To survey fish populations, trawling surveys for fish shall be conducted semiannually at three stations (see Attachment B). Daylight sampling by otter trawl will be conducted at the 20, 40 and 60 ft. isobaths at each station. Each trawl will be of five-minute duration. Collected fishes will be identified and enumerated, and sex determined for selected species. The results of the trawling surveys shall be reported annually in accordance with the due dates specified in Table E-11 for the Annual Receiving Waters Monitoring Report.

D. Kelp Densities

1. Fixed Quadrant Sampling

Individual giant kelp plants and the number of associated stipes greater than 2 m will be counted tri-annually at fixed quadrants associated with six station (Stations 10, 14-15, 16-17, 18-19, 22, and 23) located in the San Onofre Kelp (see Attachment 1, Figure 3 of this MRP). The composition of the substrate will be qualitatively described and percent cover information will be collected at each of the fixed quadrant sites.

2. Random Quadrant Sampling

Semiannual sampling shall also be conducted at ten 10-m^2 circular quadrants randomly selected within 30-m radius of each of the six stations in the San Onofre Kelp. The random sampling shall include the enumeration of giant kelp, and an estimate of the substratum composition (i.e. percent of sand, cobble, and boulder) within each of the random quadrants.

E. Temperature Profiles

Temperature will be recorded daily (every 15 minutes) at monitoring stations C2S, C22S, and F2S.

Temperature profiles from the surface to the bottom will be measured quarterly at the following designated Impact and Control Stations (see Attachment B):

1. Impact Stations: X0, C1N, C2N, C1S, C2S, F2N, F2S, H0, H2N, H2S, J0, J2N, J4N, J8N, J2S, J4S, J8S, M0, M2N, M4N, M8N, M2S, M4S, and M8S.

2. Control Stations: C22S, F22S, H22S, J22S, and M22S.

F. Water Quality Measurements

Offshore monitoring is necessary to answer the following questions:

(1) Does the discharge of oxygen demanding waste cause the dissolved oxygen concentration to be depressed at any time more than 10 percent from that which occurs naturally?

(2) Does the discharge of waste cause the pH to change at any time more than 0.2 units from that which occurs naturally to determine compliance with Receiving Water Limitations, section V.A.3.b of the Order?

Dissolved oxygen concentrations and pH will be measured quarterly at the surface of the following designated Impact and Control Stations (see Attachment B):

1. Impact Stations: X0, C1N, C2N, C1S, C2S, J2N, J2S, and J4S

2. Control Stations: C22S and F22S

G. Reporting

A report containing detailed analyses of the previous year's receiving water monitoring data shall be submitted to the San Diego Water Board by August 1 of each year. Each section of the report shall contain a graphical and written summary of historical data with the goal of displaying long term trends.

V. REGIONAL MONITORING REQUIREMENTS

Regional ocean water monitoring provides information about the sources, fates, and effects of anthropogenic contaminants in the coastal marine environment necessary to make assessments over large areas. The large scale assessments provided by regional monitoring describe and evaluate cumulative effects of all anthropogenic inputs and enable better decision making regarding protection of beneficial uses of ocean waters. Regional monitoring data assists in the interpretation of core monitoring studies by providing a more accurate and complete characterization of reference conditions and natural variability. Regional monitoring also leads to methods standardization and improved quality control through inter-calibration exercise. The coalition, implementing regional monitoring, enables sharing of technical resources, trained personnel and associated costs. Focusing these resources on regional issues and developing a broader understanding of pollutants effects in ocean waters enables the development of more rapid and effective response strategies. Based on all of these considerations the San Diego Water Board supports regional approaches to monitoring ocean waters.

The Discharger shall, as directed by the San Diego Water Board, participate with other regulated entities, other interested parties, and the San Diego Water Board in development and implementation of new and improved monitoring and assessment programs for ocean waters in the San Diego Region and discharges to those waters. These programs shall be developed and implemented so as to:

(1) Determine the status and trends of conditions in ocean waters in the San Diego Region with regard to beneficial uses, e.g.,

i. Are fish and shellfish safe to eat?

ii. Is water quality safe for swimming?

iii. Are ecosystems healthy?

(2) Identify the primary stressors causing or contributing to conditions of concern;

(3) Identify the major sources of the stressors causing or contributing to conditions of concern; and

(4) Evaluate the effectiveness (i.e., environmental outcomes) of actions taken to address such stressors and sources.

Development and implementation of new and improved monitoring and assessment programs for ocean waters will be guided by the following:

1. *Water Quality Control Plan Ocean Waters of California* (Ocean Plan);

2. San Diego Water Board Resolution No. R9-2012-0069, *Resolution in Support of A Regional Monitoring Framework;*

3. San Diego Water Board staff report entitled *A Framework for Monitoring and Assessment in the San Diego Region;* and

4. Other guidance materials, as appropriate.

A. Kelp Bed Canopy Monitoring

Kelp consists of a number of species of brown algae. Along the central and southern California coast, giant kelp (*Macrocystis pyrifera*) is the largest species colonizing rocky, and in some cases sandy, subtidal habitats. Giant kelp is an important component of coastal and

island communities in southern California, providing food and habitat for numerous animals. Monitoring of the kelp beds is necessary to answer the following questions:

(1) What is the maximum areal extent of the coastal kelp bed canopies each year?

(2) What is the variability of the coastal kelp bed canopy over time?

(3) Are coastal kelp beds disappearing? If yes, what are factors that could contribute to the disappearance?

(4) Are new coastal kelp beds forming?

The Discharger shall participate with other southern California ocean dischargers in an ongoing regional survey of coastal kelp beds in the Southern California Bight. The intent of these surveys is to provide an indication of the health of these kelp beds, recognizing that the extent of kelp bed canopies may change due to a variety of influences.

Kelp beds shall be monitored by means of vertical aerial infrared photography to determine the maximum areal extent of the canopies of coastal kelp beds each year. Surveys shall be conducted as close as possible to when kelp bed canopies are at their greatest extent during the year. The entire San Diego Region coastline, from the international boundary to the San Diego Region/Santa Ana Region boundary shall be photographed on the same day.

The maximum areal extent of kelp bed canopies each year shall be compared to that observed in previous years. Any significant losses that persist for more than one year shall be investigated by divers to document benthic and understory conditions.

The data, analyses, assessment, and images produced by the surveys shall be made available in a user-friendly format on a website that is readily available to the public. In addition to the kelp bed canopies, the images shall show onshore reference points, locations of all ocean outfalls and diffusers, artificial reefs, areas of known hard-bottom substrate (i.e., rocky reefs), and depth contours at intervals of 30-feet mean lower low water (MLLW).

The surveys shall be conducted on a “continuous improvement” basis, i.e., each year improvements shall be made in monitoring, analysis, assessment, and/or documentation. For example, these could include:

1. More sophisticated analysis of patterns, correlations, and cycles that may be related to the extent of kelp bed canopies; or

2. Projects to improve understanding of influences on kelp beds or of how the extent of the canopies of various kelp beds has changed since the early 20th century.

B. Southern California Bight Monitoring Program Participation Requirements

The Discharger may be required to participate in the, Southern California Bight Regional Monitoring Program coordinated by the Southern California Coastal Water Research Project (SCCWRP), or any other regional program named by the San Diego Water Board Executive Officer, as directed by the Executive Officer pursuant to Water Code 13267, 13383, and 40 CFR section 122.48. The intent of the Southern California Bight Regional Monitoring Program is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled scientific resources of the Southern California Bight.

During these coordinated sampling efforts, the Discharger’s receiving water sampling and analytical effort, as defined in section IV of this MRP, may be reallocated to provide a regional assessment of the impact of the discharge to the Southern California Bight. In that event, the Executive Officer shall notify the Discharger in writing that the requirement to perform the receiving water sampling and analytical effort defined in section IV of this MRP is suspended

for the duration of the reallocation. Anticipated modifications to the monitoring program will be coordinated so as to provide a more comprehensive picture of the ecological and statistical significance of monitoring results and to determine cumulative impacts of various pollution sources. The level of resources in terms of sampling and analytical effort redirected from the receiving water monitoring program required under section IV of this MRP shall approximately equal the level of resources provided to implement the regional monitoring and assessment program, unless the Executive Officer and the Discharger agree otherwise. The specific scope and duration of the receiving water monitoring program reallocation and redirection shall be determined in writing by the Executive Officer in consultation with the Discharger.

VI. SPECIAL STUDIES REQUIREMENTS

The cooling water intake monitoring, and fish impingement/entrainment monitoring requirements set forth below are designed to ensure compliance with State and federal regulations. The overall intake monitoring program is intended to answer the following questions:

(1) Does the intake water meet water quality standards and Thermal Plan objectives?
(2) What is the relative contribution of the Facility's thermal waste discharge to the receiving water?
(3) Is the Facility in compliance with the State's OTC Policy requirements?
(4) What is the status of the Once-Through Cooling Water Compliance Schedule? Including, has the Discharger completed immediate and/or interim requirements?
(5) Is the Facility in compliance with CWA section 316(b) requirements?

In addition to the Core Monitoring, Receiving Water Monitoring, and Regional Monitoring requirements (see sections III through V), the Discharger shall comply with the following special study monitoring requirements:

A. Fish Impingement/Entrainment Monitoring

Since the intake flow rates have been drastically reduced due to decommissioning activities, impingement has not occurred. A visual assessment of the forebays and intake system is required to be conducted monthly to confirm that impingement continues to not occur.

The results of the visual assessment shall be reported semiannually. If the visual assessment identifies that fish are impinged or entrained, then the Discharger shall record the following:

1. Total weight and number of each species of fish removed from the traveling bar racks and screens;

2. Standard length and sex of select species in a representative sample removed from the traveling bar racks and screens. For fish length, where up to 125 individuals of a species are removed, the "representative sample" shall consist of all the individuals removed. Where more than 125 individuals of a species are removed, the "representative sample" shall consist of not less than 125 individuals. For determination of fish sex, the "representative sample" shall be the same as for fish length, except the number of individuals shall be 50.

A report describing the visual assessment and also containing detailed analysis of the previous year's fish entrainment monitoring data, if any, shall be submitted by August 1 of each year. The report shall contain a narrative and graphical summary of all historical data with the goal of displaying long-term trends.

B. Monitoring Location INF-002 and INF-003– Cooling Water Intake Monitoring

Cooling water inflow shall be monitored and analyzed in accordance with the following schedule. The Discharger shall monitor the cooling water intake at INF-002 and INF-003 as follows:

Table E-10. Influent Monitoring – Cooling Water

Parameter	Units	Sample Type[1]	Minimum Sampling Frequency	Reporting
Flow (Average and Max Daily)	MGD	Meter or estimate	Continuous	Monthly
Turbidity	NTU	Grab	1/Month	Monthly
Temperature (Average and Maximum Daily)[2]	°F	--	Once every 2 hours[3]	Monthly

[1] A grab sample is an individual sample of at least 100mLs collected at a randomly selected time over a period not exceeding 15 minutes.

[2] Temperature shall be recorded at a minimum frequency of once every two hours. The average and maximum temperatures for each 24-hour period shall be reported. Insignificant figures shall be rounded to the nearest significant figures. The daily average difference (ΔT) and the maximum daily difference (ΔTm) between the intake and the discharge temperatures shall also be reported.

[3] When cooling water is no longer required for Facility operations and subject to written concurrence by the San Diego Water Board, the frequency of influent monitoring for temperature may be reduced from once every two hours to weekly.

VII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. The Discharger shall report all instances of noncompliance not reported under Standard Provisions (Attachment D), sections III, V, and VI, of this Order at the time monitoring reports are submitted.

B. Self-Monitoring Reports (SMRs)

1. The Discharger shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program website (http://www.waterboards.ca.gov/ciwqs/index.html). The CIWQS website will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal.
2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through VI. The Discharger shall submit monthly, quarterly, semiannual, annual SMRs including the results of all required monitoring using USEPA approved test methods or other test methods specified in this Order. SMRs are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-11. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	1st of the second month following the monitoring period
Daily	Order effective date	Daily, 12:00 AM through 11:59 PM	
Monthly	First day of calendar month following Order effective date or on Order effective date if on first day of month	First day of the calendar month through the last day of the calendar month	
Quarterly	Closest January 1, April 1, July 1, or October 1 following (or on) Order effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	
Semiannually	Closest of January 1 or July 1 following (or on) permit effective date	January 1 through June 30 July 1 through December 31	
Annual	Permit Effective Date	January 1- December 31	
Annual Receiving Water Report	Permit Effective Date	January 1 – December 31	August 1

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable reported minimum level (reported ML, also known as the Reporting Level, or RL) and the current method detection limit (MDL), as determined by the procedure in 40 CFR part 136. For each numeric effluent limitation or performance goal for a parameter identified in Table 1 of the Ocean Plan, the Discharger shall not use a ML greater than that specified in Appendix II of the Ocean Plan.

   The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   a. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

   For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (± a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

   c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

   d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger

to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

5. **Compliance Determination.** Compliance with effluent limitations for reportable pollutants shall be determined using sample reporting protocols defined above and Attachment A. For purposes of reporting and administrative enforcement by the San Diego Water Board and State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the reportable pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported ML.

6. **Multiple Sample Data.** When determining compliance with a measure of central tendency (arithmetic mean, geometric mean, median, etc.) of multiple sample analyses and the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND), the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

   a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

   b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

7. The Discharger shall submit SMRs in accordance with the following requirements:

   a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

   b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

   c. The SMRs shall clearly identify violations of the WDR's; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

   d. Copies of all reports submitted by the discharger to the Nuclear Regulatory Commission pertaining to monitoring of radioactive materials in wastewaters released from the Facility shall be transmitted to the San Diego Water Board.

C. Discharge Monitoring Reports (DMRs)

1. The Discharger shall electronically submit DMRs using the State Water Board's CIWQS Program website (http://www.waterboards.ca.gov/ciwqs/index.html). The CIWQS website will provide additional information for DMR submittal in the event there will be a planned service interruption for electronic submittal.
2. DMRs must be signed and certified as required by the Standard Provisions (Attachment D).

D. Other Reports

The following reports are required under Special Provisions (section VI.C of the Order) and the California Code of Regulations. These reports shall be submitted to the San Diego Water Board, signed and certified as required by the Standard Provisions (Attachment D). The reports shall be submitted to the San Diego Water Board, via the State Water Board's CIWQS Program website or via email to SanDiego@waterboards.ca.gov.

Table E-12. Other Reports

Report	Location of Requirement	Due Date
Toxicity Reduction Evaluation Plan	Section VI.C.2.b	Within 180 days of the adoption of the Order
Report of Waste Discharge (for permit renewal)	Title 23, California Code of Regulations	180 days prior to this Orders expiration date
Once-Through Cooling Water Compliance Schedule Status	Section VI.C.6.a	January 15, 2016
Progress Report on LOED Compliance Actions	Section VI.C.6.a	July 1, 2016

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section II.B of this Order, the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) incorporates this Fact Sheet as findings of the San Diego Water Board supporting the issuance of this Order. This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as “not applicable” have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as “not applicable” are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	9 000002842
Discharger	Southern California Edison Company
Name of Facility	San Onofre Nuclear Generating Station
Facility Address	5000 Pacific Coast Highway
	San Clemente, CA 92672
	San Diego County
Facility Contact, Title and Phone	Brian Metz, Manager, Environmental, (949) 368-7311
Authorized Person to Sign and Submit Reports	Same as above
Mailing Address	PO Box 128
	San Clemente, CA 92674
Billing Address	Same as above
Type of Facility	Industrial, SIC Code No. 4911
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	NA
Recycling Requirements	N/A
Facility Permitted Flow	56.3 million gallons per day (MGD)
Facility Design Flow	2,574 MGD
Watershed	San Juan
Receiving Water	Pacific Ocean
Receiving Water Type	Ocean Waters

A. Southern California Edison Company (SCE or Discharger) is the principal owner and operator of the San Onofre Nuclear Generating Station (hereinafter SONGS or Facility), a nuclear-fueled electrical power generating facility undergoing decommissioning. SCE owns 78.2% of the Facility, while San Diego Gas & Electric and the City of Riverside own 20% and 1.8%, respectively. The Facility is located within the boundaries of the United States Marine Corps Camp Pendleton, San Diego County, California, immediately adjacent to the Pacific Ocean, five miles south of the City of San Clemente.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. The Facility discharges wastewater to the Pacific Ocean, a water of the U.S. The Discharger was previously regulated by Order Nos. R9-2005-0005, National Pollutant Discharge Elimination System (NPDES) No. CA0108073, for Unit 2 and Order No. R9-2005-0006, NPDES No. CA0108181, for Unit 3 of the Facility.

Order Nos. R9-2005-0005 and R9-2005-0006 were both adopted on May 11, 2005 and expired on May 11, 2010. The terms and conditions of these Orders were automatically continued and remain in effect until new waste discharge requirements (WDRs) and NPDES permit were adopted pursuant to this Order.

Historically, the Discharger was issued separate NPDES permits for the North Industrial Area (formerly Unit 1), Unit 2, and Unit 3 of the Facility. Unit 1 terminated power generation in 1992. In June 2013, the Discharger also retired Units 2 and 3. During the decommissioning process, the Facility continues to discharge wastewater and cooling water to the Pacific Ocean through two ocean outfalls for Units 2 and 3.

This permit combines NPDES coverage for Unit 2 and Unit 3 with the remainder of the Facility because both units are located within the geographical boundaries of the Facility, and both units are owned and operated by the same Discharger. The effluent limitations, provisions, and prohibitions in the previous NPDES permits for Unit 2 and 3 were identical. The requirements of Order Nos. R9-2005-0005 and R9-2005-0006 are incorporated into this one single Order to achieve maximum efficiency and economy of resources, and minimize redundancy to the Discharger and the San Diego Water Board. All applicable requirements from the previous Orders for Units 2 and 3 have been incorporated directly into this Order and revised as necessary.

C. The Discharger filed a report of waste discharge (ROWD) and submitted an application for reissuance of its WDRs and NPDES permit on November 10, 2009 and a revised ROWD on December 8, 2014 to reflect decommissioning. Supplemental information was received on January 9, 2015 and on February 25, 2015. The application, as revised, was deemed complete on April 23, 2015.

II. FACILITY DESCRIPTION

SONGS is a nuclear-fueled electric power generating facility located at 5000 Pacific Coast Highway, San Clemente, CA. The Facility is currently being decommissioned and no longer generates electricity. The Facility is located in San Diego County immediately adjacent to the Pacific Ocean coastline, approximately two and one-half miles southeast of San Mateo Point, within the boundaries of the U.S. Marine Corps Base, Camp Pendleton, approximately two and one-half miles southeast of the City of San Clemente and approximately 12 miles northwest of the City of Oceanside. The Facility is approximately 4,500 feet long and 800 feet wide, comprising 84 acres. The property on which the station is built is subject to an easement from the U.S.

Government through the U. S. Navy. The nearest privately-owned land is approximately 2.5 miles from the Facility.

SONGS is comprised of three separate power generating units, named NIA (formerly Unit 1), Unit 2, and Unit 3; along with administrative offices and related facilities referred to as the "Mesa". NIA is owned by SCE and San Diego Gas and Electric and was operated solely by Southern California Edison (the Discharger). Units 2 and 3 are primarily owned by SCE. San Diego Gas and Electric and the City of Riverside have a minority ownership share of Units 2 and 3. The Facility is operated solely by Southern California Edison. This Order addresses discharges from NIA, Unit 2, and Unit 3.

NIA, located adjacent to Units 2 and 3, was a nuclear-fueled electrical power generating facility like Units 2 and 3. NIA began commercial operation in 1968 and terminated power generation in November of 1992. The Discharger began formal decommissioning of NIA in September 1999. The Discharger currently continues to operate a domestic wastewater treatment plant inside the NIA premises. Up to 0.05 MGD of secondarily-treated effluent is discharged from the treatment plant. The use of Discharge Point No. 001 was terminated in 2005. All effluent from NIA is routed to Discharge Point Nos. 002 or 003.

Units 2 and 3 were pressurized water reactor nuclear steam supply systems and are virtually identical. Unit 2 began commercial operation in 1983 and had a generating capacity of 1070 megawatts. Unit 3 began commercial operation 1984 and had a generating capacity of 1080 megawatts. Table F-2 lists the design generating capacity and the date of operations for each unit.

Table F-2. Facility Generating Capacity

Generating Unit	In-service Year	Net Generating Capacity (MWe)
Unit 1	1968-1992	436
Unit 2	1983-2013	1,070
Unit 3	1984-2013	1,080

Two independent cooling water intake structures provide cooling water to Units 2 and 3. Cooling water is withdrawn from the Pacific Ocean through two submerged intake conduits, each extending approximately 3,100 feet offshore at a bottom depth of 30 feet. The submerged end of each conduit is fitted with a velocity cap to minimize the entrainment of motile fish into the system by converting the vertical flow to a lateral flow, thus triggering a flight response from fish. Four circulating water pumps (CWPs), four salt water pumps (SWPs), and two screen wash pumps take suction to provide cooling and service water. The four CWPs in each intake structure supply cooling water to remove heat from the main condenser and turbine plant cooling water heat exchangers under all conditions of power plant loading and design weather conditions. All four CWPs are normally in operation with each CWP discharging to a quadrant of the main condenser. A portion of the flow from each CWP is combined and supplied to the turbine plant cooling water heat exchangers. The four SWPs in each intake structure are part of the Saltwater Cooling System, an engineered safety feature support system. The Saltwater Cooling System for each unit consists of two 100% capacity critical trains each containing two SWPs. The two full-capacity screen wash pumps each have a design capacity of 2500 gallons per minute (gpm). These pumps supply water to the traveling bar and screen wash spray nozzles and traveling bar and screen troughs.

After passing through the Circulating Water System and the Saltwater Cooling System, the once-through cooling water is combined with low-volume wastes generated by SONGS and discharged. The combined discharge flows through submerged conduits and is released through a diffuser section designed to dissipate the discharge heat. The discharge conduits extend 8,500 feet (Unit 2) and 6,000 feet (Unit 3) offshore into the Pacific Ocean.

Unit 2 was shut down in early January 2012 for routine refueling and replacement of the reactor vessel head. On January 31, 2012, Unit 3 suffered a small radioactive leak and the reactor was shut down per standard procedure.

In June 2013, the Discharger announced that it would permanently retire Units 2 and 3 and began the decommissioning process, and as of October 2013, the intake flows for Units 2 and 3 were reduced significantly, by approximately 96%.

The Facility may continue to utilize ocean water during the decommissioning process, for the operation of the onsite spent nuclear fuel pools, and also to comply with the requirement to provide a dilution of at least 10 parts seawater to 1 part effluent from the NIA Sewage Treatment Plant.

A. Description of Wastewater and Biosolids Treatment and Controls

The Discharger's ROWD indicates that a maximum of approximately 56.3 MGD of wastewater is discharged through Discharge Points Nos. 002 and 003. Internal discharge point designations are based on the discrete location where the internal waste stream discharges to the main waste stream (i.e., Discharge Point Nos. 002 and 003). The discharges from the Facility are made up of the spent nuclear fuel pool cooling discharges and internal waste streams specified in Table F-3. Attachment C contains a water balance diagram containing the configuration and maximum flow rates for each waste stream.

Table F-3. Waste Streams

Discharge Point	Wastewater Discharge Description	Estimated Maximum Flows (MGD)*
002 or 003	Saltwater Cooling Intake Pumps	49
	Internal Waste Streams:	
	NIA Sewage Treatment Plant	0.05
	Metal Cleaning Wastes	0.04
	Radwaste System	0.2
	Yard or Plant Drains	0.324
	Dewatering	11.25
	Makeup Demineralizer	0.67
	Intake Structure Sump	0.288
	Concrete Cutting Cooling	0.2
	Common Oil Removal System	0.288

* Based on reported flows in Report of Waste Discharge (EPA Form 2C).

1. Saltwater Cooling Water

The operational demand for cooling and makeup water has been reduced since Units 2 and 3 permanently ceased operation. Intake and discharge of ocean cooling water at the Facility has been reduced by 96% in comparison to cooling water use in 2009. While the Facility is not operating, the service water cooling demands have been reduced.

The Units 2 and 3 cooling water system is comprised of eight saltwater cooling pumps (four per unit). The saltwater cooling system for each of the two units uses approximately 49 MGD of OTC ocean water to remove heat from a closed loop component cooling water system that serves various auxiliary reactor systems and from the turbine plant Cooling Water System. The saltwater cooling water is withdrawn from and returned to the main condenser cooling water system. The cooling water intake structures for Units 2 and 3 are submerged 3,183 feet offshore in the Pacific Ocean at a depth of approximately 32 feet. Circulator pump flow has ceased and heat is no longer generated. All circulating water pumps have been secured and are no longer in service. During this circuit, the internal waste streams are comingled with the cooling water flow. Wastewater

discharges associated with the operation of the cooling water system discharge directly to Discharge Point Nos. 002 or 003 without additional treatment.

2. Treated Sewage

Historically, treated sewage from both the NIA sewage treatment plant and a separate treatment plant at the Mesa portion of the facility were comingled and discharged to the ocean as a single point source sewage discharge. In 2014, the Mesa buildings were retired and the treated sewage flow from the Mesa to the NIA Sewage Treatment Plant has been reduced. Remaining Mesa buildings will be turned over to the U.S. Navy who will assume direct responsibility for providing sewage treatment before these Mesa buildings are reoccupied. Due to the reduction in flows, the NIA Sewage Treatment Plant operates on only one of two treatment trains.

3. Metal Cleaning Wastes

Chemical metal cleaning may be periodically performed on some plant systems in support of the ongoing decommissioning activities. Wastewater from this process will be treated and filtered to within NPDES effluent limitations prior to discharge. Non-chemical metal cleaning may be periodically performed on some plant systems in support of the ongoing decommissioning activities, approximately 0.04 MGD of treated wastewater from this process.

4. Radwaste

Radioactive plant drains are routed to the radwaste processing system where the water is purified and radioactivity removed through filters and ion exchangers. The purified water is sampled and analyzed for radioactivity prior to release through an additional radiation monitor. All radioactivity sampling, reporting, and regulatory oversight fall under the jurisdiction of the Nuclear Regulatory Commission (NRC) in accordance with the federal Atomic Energy Act (AEA).

The Facility discharges to either outfall residual liquids stored in the reactor cavity, the spent fuel pool, piping, tanks, and pressure vessels that previously conveyed or stored water containing licensed radioactive material. There are also sumps onsite that are either definitively contaminated with licensed radiological materials or potentially contaminated with such material. These sumps typically collected pump seal water, storm water runoff, and groundwater from surfaces containing or covered with licensed radiological material or other relatively low activity but still licensed material.

Water from all these sources are sampled for oil and grease and treated if oil and grease could be present from a particular sump source. The effluent is then continuously monitored for radiological activity and released only when appropriate saltwater flows are available for dispersion through the discharge diffusers as per the credited and approved *Offsite Dose Calculation Manual* pathway overseen by the NRC.

The effluent from the spent fuel pool and the reactor cavity will be processed as necessary to remove suspended materials and any suspended solid licensed radioactive material. Based on the levels of the treated water, the Discharger evaluates the necessary flow-rate of saltwater required for dispersion through the discharge diffusers as per the *Offsite Dose Calculation Manual*. The Discharger then documents the flow condition of the saltwater pump(s) to be used for the batch release of licensed radioactive effluents, and sets the flow release to ensure that the discharge of the

combined flows meet the requirements of the *Offsite Dose Calculation Manual* and 10 Code of Federal Regulations (CFR) part 20.

5. Yard or Plant Drains

There are three separate collection areas and two specific points of storm water discharge to the outfalls. Units 2 and 3 each have their own catchments and the NIA has another catchment. At the NIA, storm water is collected in the NIA sump and pumped either into the Unit 2 or Unit 3 collection and storm water drain system.

There are also some storm water flows that do not discharge to the outfalls. Other storm water flows on the Facility are generated from parking lots and are discharged to culverts leading directly to the beach or to San Onofre Creek. These storm water discharges are not within the formerly industrialized area of the Facility and do not connect to the Unit 2 or Unit 3 storm water discharge points.

The Unit 2 yard drain system collects storm water and miscellaneous surface drainage from the yard areas immediately adjacent to major structures including the east road adjacent to the fuel handling building, tank and diesel buildings, service water tanks, and the west road adjacent to the turbine building. The drain headers combine into a single 36 inch line that runs south along the west road and enters the Unit 2 circulating water intake structure.

The Unit 3 yard drain system is a mirror image of the Unit 2 system within the Facility. In addition, the Unit 3 yard drains collect storm water and surface drainage from the switchyard, the high flow makeup demineralizer area, the South Yard Area, the Multi-Purpose Handling Facility, Parking Lots 1 and 2, an offsite culvert crossing under Interstate 5, and access areas south of the Facility within the owner controlled area. The multiple storm drain headers combine into a single 72 inch line that runs north along the west road and enters the Unit 3 circulating water intake structure.

The Unit 2 and Unit 3 subsurface drainage system is designed to accommodate the runoff from the onsite areas and offsite areas west of Interstate Highway 5, and should accommodate resulting runoff from a precipitation intensity of up to three inches per hour. The storm drain pipes are sized based upon maximum flow rates of 520 cubic feet per second (cfs) from the 72 inch pipe coming into the Facility from under Interstate 5, 26.27 cfs from Unit 2, and 26.00 cfs from Unit 3 for the 100 year storm event. This equates to a design capacity of 572 cfs or approximately 260,000 gpm. At that rate, in a 10 minute period, a volume of 2,500,000 gallons will pass thru these two main storm water systems. On a daily average basis, approximately 324,000 gpd, will be discharged as storm water. These are the same values as the combined storm water average flow presented in Order Nos. R9-2005-005 and R9-2005-0006.

6. Groundwater Extraction and Dewatering

Groundwater extraction has been conducted at the NIA since the decommissioning and demolition of Unit 1. The discharge from this portion of the Facility has been regulated through Amendment No. 1 to Order Nos. R9-2005-0005 and R9-2005-0006 adopted on April 12, 2006. Extraction of the North Industrial Area groundwater occurs through one or more of the four extraction wells placed selectively to extract groundwater suspected of contributing to higher radioactive activity levels at the North Industrial Area. This extraction is performed at varying levels as needed to contain the activity level and

potential for offsite dispersion of radioactive groundwater. This extraction is intermittent and currently performed at a higher flow rate whenever groundwater monitoring wells detect that groundwater activity levels are increasing.

According to the ROWD, the groundwater levels are observed regularly with sampling from separate monitoring wells. The extracted groundwater is pumped to the nearby North Industrial Area sump. The groundwater levels are observed in the North Industrial Area sump, the saltwater pumps flow rates are confirmed, and the North Industrial Area sump is metered out at a flow rate such that the discharge to the ocean outfall, when combined with the saltwater pumps discharge, is reduced to a value within the limits of the *Offsite Dose Calculation Manual* and requirements of 10 CFR part 20. All discharges of licensed radioactive materials are monitored continuously with feedback control to stop the discharge of licensed radioactive material if any flow rate or activity levels pose a challenge to the *Offsite Dose Calculation Manual* limits for release.

Currently up to 3.75 MGD of NIA groundwater contaminated with licensed radioactive materials is discharged from NIA pumps. Similar licensed radioactive material in groundwater is assumed to be present under Unit 2 and Unit 3 and will be confirmed when these structures are removed during the Facility demolition. Over the course of the decommissioning, nearly all radiological source terms that generate water containing licensed radioactive materials will be reduced when the spent fuel in the pool is removed to dry cask storage.

7. Makeup Demineralizer

The makeup demineralizer system produces deionized water for various in-plant systems. Potable water purchased from municipal suppliers is passed through ion exchange resins, with regenerants discharged to a neutralization sump. After pH neutralization, wastewater is pumped to the cooling system for discharge.

8. Intake Structure Sump

The Units intake structure sumps collect a portion of the bearing flush water and ocean water from pumps and is discharged to the cooling system.

9. Concrete Cutting Water

Concrete cutting may be needed to support decommissioning at the facility. Water not only helps cool and lubricate the cutting saw but also helps keep dust down.

10. Common Oil Removal System

Non-radioactive plant drains flow to building sumps, which are then pumped to the Units 2 and 3 common oil removal system. The non-radioactive plant drains refer to drains from systems that do not normally contain radioactivity, but on occasion may contain trace amounts. Non-radioactive plant drains are routed through a radiation monitor. The low-volume treatment system separates the oil and grease and precipitates or settles out suspended sediments. Wastes from floor drains at the Facility and other general liquid wastes are directed to this treatment system. The reject water from the mobile demineralizer and building sumps and floor drains discharge to the common oil removal system. Segregated oil and grease is collected for offsite disposal reuse.

11. Concrete cutting water

During decommissioning, concrete structures will be decontaminated and removed from the Facility. Water used to cool the concrete cutting saw may be discharged from various locations throughout the Facility. Concrete cutting water is considered a low-volume waste.

B. Discharge Points and Receiving Waters

Cooling water and other waste streams are discharged from Units 2 and 3 to the Pacific Ocean through either Discharge Point No. 002 or 003. Discharge Point No. 002 is equipped with a 2,462 feet long diffuser pipe that starts at 5,888 feet offshore and extends to 8,350 feet offshore. The Unit 2 diffuser pipe ranges in depth from 39 feet to 49 feet. The offshore end of the Unit 2 diffuser pipe is located at latitude 33º 20' 55.84" North and longitude 117º 34' 13.5" West. The diffuser is equipped with 63 jet nozzles. The nozzles are alternated in the direction of 25 degrees upcoast and 25 degrees downcoast along the diffuser pipe. Further, the nozzles are directed at an angle of 20 degrees off of the bottom and the nozzle openings are only two feet off the seafloor. The initial offshore momentum of the effluent from the jet nozzles promotes the mixing of the effluent with the receiving seawater.

Discharge Point No. 003 is equipped with a 2,500 feet long diffuser pipe that starts at 3,400 feet offshore and extends to 5,900 feet offshore (at a depth of approximately 39 feet). The offshore end of the Unit 3 diffuser pipe is located at latitude 33º 21' 11.74" North and longitude 117º 33' 51.61" West. The Unit 3 diffuser, like the Unit 2 diffuser, is equipped with 63 jet nozzles. The design, operation, and function of the jet nozzles in the Unit 3 diffuser are identical to the Unit 2 diffuser.

The Unit 3 diffuser is located closest to the Unit 2 and 3 intakes. The nearest shoreward discharge jet nozzle of the Unit 3 diffuser is located approximately 990 feet and 330 feet from the Unit 2 and 3 intakes respectively (in the lateral direction). The nearest Unit 2 diffuser jet nozzle is located a very large distance (approximately 2,700 feet) away from either of the two intakes (in the longitudinal direction). The design of the Unit 2 and 3 diffusers ensures that heated effluent actively travels away from the diffusers and shoreline in a longitudinal direction. This also ensures that the discharge from the diffusers does not move in the lateral direction and get entrained in the Unit 2 and 3 intake structures.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

1. Effluent limitations contained in the previous Orders for discharges from Discharge Point Nos. 002 and 003 (the Combined Discharge at Monitoring Locations 002 and 003) and representative monitoring data from the term of the previous Orders are as follows:

Table F-4. Historic Effluent Limitations and Monitoring Data for the Combined Discharge (Discharge Point Nos. 002 and 003)

Parameter	Units	Effluent Limitations			Combined Discharge Monitoring Data (August 2013-December 2014)[1]		
		6-Month Median	Daily Max	Instantaneous Maximum	6-Month Median	Daily Max	Instantaneous Maximum
Total Chlorine Residual	µg/L	22	88	--	4.2 (002) 4.1 (003)	80	--
Chronic Toxicity	TUc	--	11	--	--	3.13	--

Parameter	Units	Effluent Limitations			Combined Discharge Monitoring Data (August 2013-December 2014)[1]		
		6-Month Median	Daily Max	Instantaneous Maximum	6-Month Median	Daily Max	Instantaneous Maximum
Residual Heat		At all times, the maximum temperature of the discharge through Discharge Point Nos. 002 or 003 to the Pacific Ocean shall not exceed the natural temperature of the receiving water by more than 25º F.			Maximum difference of 9ºF(002) and 10º F (003)		
Limitations For Protection of Marine Aquatic Life							
Arsenic	lbs/day	--	--	850	--	--	<25
Cadmium	µg/L	--	--	110	--	--	<4
Chromium VI	µg/L	--	--	220	--	--	<2
Copper	µg/L	--	--	310	--	--	<12
Lead	µg/L	--	--	220	--	--	<19
Mercury	µg/L	--	--	4.4	--	--	<0.3
Nickel	µg/L	--	--	550	--	--	<10
Selenium	µg/L	--	--	1,700	--	--	<26
Silver	µg/L	--	--	75	--	--	<3
Zinc	µg/L	--	--	2,100	--	--	<24
Cyanide	µg/L	--	--	110	--	--	<20
Ammonia	µg/L	--	--	66,000	--	--	10,500 (002) 9,000 (003)
Phenols, Non-chlorinated	µg/L	--	--	3,300	--	--	<1
Phenols, Chlorinated	µg/L	--	--	110	--	--	<1
Endosulfan	µg/L	--	--	0.30	--	--	<0.05
Endrin	µg/L	--	--	0.066	--	--	<0.1

Parameter	Units	Effluent Limitations			Combined Discharge Monitoring Data (August 2013-December 2014)[1]		
		6-Month Median	Daily Max	Instantaneous Maximum	6-Month Median	Daily Max	Instantaneous Maximum
HCH	µg/L	--	--	0.13	--	--	<0.1

[1] Values are identical for Discharge Point Nos. 002 and 003 unless otherwise noted.

2. Effluent limitations contained in the previous Order for Combined Low-Volume Miscellaneous Discharges (Internal Outfalls 001-D through 001-F, 002-C through 002-K, 003-C through 003-K) and representative monitoring data from the term of the previous Order are as follows:

Table F-5. Historic Internal Effluent Limitations and Monitoring Data for the Combined Low-volume Miscellaneous Discharges (Internal Outfalls 001-D through 001-F, 002-C through 002-K, 003-C through 003-K)

Parameter	Units	Internal Effluent Limitations			Combined Discharge Monitoring Data (August 2013-December 2014)[1,2]
		Daily Max	30-Day Average	6-Month Median	Daily Max
Unit 2					
Limitations For Protection of Marine Aquatic Life					
Arsenic	lbs/day	35	--	6.4	1.0
Copper	lbs/day	12	--	1.4	11
Lead	lbs/day	9.7	--	2.4	0.1
Mercury	lbs/day	0.19	--	0.048	0.0
Nickel	lbs/day	24	--	6.1	0.1
Silver	lbs/day	3.2	--	0.67	0.01
Zinc	lbs/day	88	--	15	3.7
Ammonia	lbs/day	2900	--	730	77
Limitations for the Protection of Human Health – Non Carcinogens					
Antimony	lbs/day	--	1500	--	1.2

Parameter	Units	Internal Effluent Limitations			Combined Discharge Monitoring Data (August 2013-December 2014)[1,2]
		Daily Max	30-Day Average	6-Month Median	Daily Max
Limitations for Protection of Human Health –Carcinogens					
Chlorodi-bromomethane	lbs/day	--	10	--	0.3
Chloroform	lbs/day	--	160	--	0.6
Dichloro-bromoethane	lbs/day	--	7.5	--	0.3
Unit 3					
Limitations For Protection of Marine Aquatic Life					
Arsenic	lbs/day	35	--	6.4	2.4
Copper	lbs/day	12	--	1.4	14
Lead	lbs/day	9.7	--	2.4	0.8
Mercury	lbs/day	0.19	--	0.048	0.01
Nickel	lbs/day	24	--	6.1	0.9
Silver	lbs/day	3.2	--	0.67	0.01
Zinc	lbs/day	88	--	15	16
Ammonia	lbs/day	2900	--	730	92
Limitations for the Protection of Human Health – Non Carcinogens					
Antimony	lbs/day	--	1500	--	1.1
Limitations for Protection of Human Health –Carcinogens					
Chlorodi-bromomethane	lbs/day	--	10	--	2.4
Chloroform	lbs/day	--	160	--	1.0

Parameter	Units	Internal Effluent Limitations			Combined Discharge Monitoring Data (August 2013-December 2014)[1,2]
		Daily Max	30-Day Average	6-Month Median	Daily Max
Dichloro-bromomethane	lbs/day	--	7.5	--	1.2

[1] The MRP required that individual grab samples of each low-volume waste stream be composited on a flow-weighted basis.
[2] All non-Table 1 parameters with only non-detect values not included.

3. Once-through cooling water had no exceedance of total residual chlorine and/or bromine discharge for more than two hours per day.

4. Effluent limitations contained in the previous Orders for discharges of Metal Cleaning Wastes (Chemical and Non-Chemical) (Discharge Point 002-A, 003-A) from the previous Order are as follows:

Table F-6. Historic Effluent Limitations and Monitoring Data for Metal Cleaning Wastes (Chemical and Non-Chemical) (Discharge Point 002-A, 003-A)

Parameter	Units	Effluent Limitations		Metal Cleaning Wastes Monitoring Data (August 2013-December 2014)	
		30-Day Average	Daily Max	Highest 30-Day Average	Highest Daily Max
Total Suspended Solids (TSS)	mg/L	30	100	No Discharge	No Discharge
Oil and Grease	mg/L	15	20	No Discharge	No Discharge
Copper, Total	mg/L	1.0	1.0	No Discharge	No Discharge
Iron, Total	mg/L	1.0	1.0	No Discharge	No Discharge

5. Effluent limitations contained in the previous Orders for individual, low-volume miscellaneous discharges from Unit 1 (001-D and 001-E), Unit 2 (002-D, 002-E, 002-I, 002-J, 002-K, 002-L), and Unit 3 (003-D, 003-E, 003-I, 003-J, 003-K, 003-L), with compliance measured at Monitoring Locations Unit 1 (INT-001-D and INT-001-E), Unit 2 (INT-002-D, INT-002-E, INT-002-I, INT-002-J, INT-002-K, INT-002-L), and Unit 3 (INT-003-D, INT-003-E, INT-003-I, INT-003-J, INT-003-K, INT-003-L) and representative monitoring data from the term of the previous Order are as follows:

Table F-7. Historic Internal Effluent Limitations and Monitoring Data for Individual, Low-volume Miscellaneous Discharges (Discharge Points 001-E, 001-F, 002-D, 002-E, 002-F, 002-I, 002-J, 003-D, 003-F, 003-I, 003-J)

Outfall	Parameter	Units	Internal Effluent Limitations		Individual, Low-volume Wastewaters Monitoring Data (August 2013-December 2014)	
			Daily Maximum	30-Day Average	Highest Daily Maximum	Highest 30-Day Average
Unit 2						
001-F (Dewatering)	Total Suspended Solids (TSS)	mg/L	100	30	4.4	4.4
		lbs/day	720	220	3.89	2.53
	Oil and Grease	mg/L	20	15	<5	<5
		lbs/day	140	110	<11.76	5.46
002-D (Makeup Demineralizer)	Total Suspended Solids (TSS)	mg/L	100	30	7.5	7.5
		lbs/day	560	170	4.19	0.125
	Oil and Grease	mg/L	20	15	<5	<5
		lbs/day	110	84	<2.79	<0.08
002-E (Radwaste System)	Total Suspended Solids (TSS)	mg/L	100	30	3.3	3.3
		lbs/day	360	110	0.16	0.01
	Oil and Grease	mg/L	20	15	9.9	9.9
		lbs/day	72	54	1.75	1.75
002-F (Polishing Demineralizer)	Total Suspended Solids (TSS)	mg/L	100	30	10.1	10.1
		lbs/day	1200	350	10.08	8.8
	Oil and Grease	mg/L	20	15	<5	<5
		lbs/day	230	180	<4.39	<4.39
002-I (Plant Drains/Building Sump)	Total Suspended Solids (TSS)	mg/L	100	30	9.2	9.2
		lbs/day	670	200	24.8	16.17
	Oil and Grease	mg/L	20	15	5.9	5.9
		lbs/day	130	100	2.25	30.23

Outfall	Parameter	Units	Internal Effluent Limitations		Individual, Low-volume Wastewaters Monitoring Data (August 2013-December 2014)	
			Daily Maximum	30-Day Average	Highest Daily Maximum	Highest 30-Day Average
002-J (Intake Structure Sump)	Total Suspended Solids (TSS)	mg/L	100	30	19.8	19.8
		lbs/day	240	72	11.55	11.55
	Oil and Grease	mg/L	20	15	<5	<5
		lbs/day	48	36	<2.92	<2.84
Unit 3						
001-E (Yard Drains)	Total Suspended Solids (TSS)	mg/L	100	30	<0.4	<0.4
		lbs/day	300	90	<0.21	<0.21
	Oil and Grease	mg/L	20	15	5	5
		lbs/day	60	45	2.59	2.59
001-F (Dewatering)	Total Suspended Solids (TSS)	mg/L	100	30	2.6	2.6
		lbs/day	720	220	0.22	0.22
	Oil and Grease	mg/L	20	15	<5	<5
		lbs/day	140	110	<0.71	<0.54
003-D (Makeup Demineralizer)	Total Suspended Solids (TSS)	mg/L	100	30	11.9	11.9
		lbs/day	560	170	20.54	1.68
	Oil and Grease	mg/L	20	15	ND	ND
		lbs/day	110	84	ND	ND
003-F (Polishing Demineralizer)	Total Suspended Solids (TSS)	mg/L	100	30	11.6	11.6
		lbs/day	1200	350	9.86	0.29
	Oil and Grease	mg/L	20	15	11	11
		lbs/day	230	180	3.36	0.28
003-I (Plant Drains/Building Sump)	Total Suspended Solids (TSS)	mg/L	100	30	9.6	9.6
		lbs/day	670	200	15.54	0.56

Outfall	Parameter	Units	Internal Effluent Limitations		Individual, Low-volume Wastewaters Monitoring Data (August 2013-December 2014)	
			Daily Maximum	30-Day Average	Highest Daily Maximum	Highest 30-Day Average
	Oil and Grease	mg/L	20	15	9.9	9.9
		lbs/day	130	100	15.94	0.58
003-J (Intake Structure Sump)	Total Suspended Solids (TSS)	mg/L	100	30	11.9	11.9
		lbs/day	240	72	6.97	6.97
	Oil and Grease	mg/L	20	15	<5	<5
		lbs/day	48	36	<5.78	<5.78

6. Effluent limitations contained in the previous Orders for treated domestic wastewater (001-A) and representative monitoring data from the term of the previous Order are as follows:

Table F-8. Historic Effluent Limitations and Monitoring Data for Treated Domestic Wastewater

Parameter	Units	Effluent Limits			Treated Domestic Wastewater Monitoring Data (August 2013-December 2014)		
		Average Monthly	Average Weekly	Instantaneous Maximum	Average Monthly	Average Weekly	Instantaneous Maximum
Oil and Grease	mg/L	25	40	75	3	3	3
	lbs/day	21	--	--	0.1	--	0.23
Total Suspended Solids	mg/L	Not more than 25% of influent TSS			99% Removal		
Settleable Solids	ml/L	1.0	1.5	3.0	<0.1	<0.1	<0.1
Turbidity	NTUs	75	100	225	6.46	6.46	6.46
pH	S.U.	Within the limits of 6.0 to 9.0 at all times			Minimum 6.23 and Maximum 7.9		

D. Compliance Summary

The following violations were reported by the Discharger during the term of the previous Order.

Table F-9. Summary of Permit Violations during the Previous Permit Term

Date	Violation Type	Description
03/19/2007	Deficient Reporting	The daily maximum temperature readings for the combined discharge were not reported in all monthly monitoring reports.

Date	Violation Type	Description
06/02/2007	Deficient Reporting	April 2007 SMR was received on June 4, 2007. Required due date is June 1, 2007, report was late 3 days.
07/02/2007	Deficient Reporting	May 2007 SMR was received on July 2, 2007. Required due date is July 1, 2007, report was late 1 day.
08/02/2007	Deficient Reporting	January - June 2007 semiannual SMR was received on August 15, 2007. Required due date August 1, 2007, report was late 14 days. April - June 2007 SMR was received on August 14, 2007. Required due date is August 1, 2007, report was late 13 days. June 2007 SMR was received on August 14, 2007. Required due date is August 1, 2007, report was late 13 days.
09/02/2007	Deficient Reporting	July 2007 SMR was received on September 4, 2007. Required due date is September 1, 2007, report was late 3 days.
11/02/2007	Deficient Reporting	July - September 2007 SMR was received on November 27. Required due date is November 1, 2007, report was late 26 days (1 violation).
01/02/2008	Deficient Reporting	November 2007 SMR was received on January 2, 2008. Required due date is January 1, 2007, report was late 1 day. (1 violation).
05/22/2008	Deficient Reporting	The quarterly report of Jan-March was received on May 22, 2008. The report was due May 1st, this is 21 days late.
02/02/2012	Deficient Reporting	The following reports were received 1 day after the due date of February 1, 2012 for the Facility Unit 2 and 3: December monthly, October-December quarterly, July-December semiannual, and January-December annual report, this is a violation according to Section XIII.5. of the Monitoring and Reporting Program.
10/01/2013	Deficient Reporting	Monthly August 2013 SMR was due October 1, 2013 and was submitted late on November 1, 2013.
10/01/2014	Deficient Monitoring/Reporting	The Annual 2013 Report was due on February 1, 2014 and was submitted October 1, 2014
10/01/2014	Deficient Monitoring/Reporting	H2 2013 Semi-Annual Report was due on February 1, 2014 and was submitted on October 1, 2014.
10/01/2014	Deficient Monitoring/Reporting	H1 2014 Semi-Annual Report was due on August 1, 2014 submitted October 1, 2014.

Date	Violation Type	Description
10/24/2014	Deficient Monitoring/Reporting	Unit 2 August 2014 Report was due on October 1, and submitted Oct. 24, 2014

E. Planned Changes

1. **Decommissioning**. The Dischargers have chosen the DECON method of decommissioning in which structures, systems, and components that contain radioactive contamination are removed and safely disposed at a low-level waste disposal facility, or decontaminated to a level that permits the Facility to be released for unrestricted use. The Facility is currently in the planning stage during which it is preparing for safe and orderly transition to dismantlement. The equipment, structures, and portions of the facility that contain radioactive contaminants are promptly removed or decontaminated to a level that permits termination of the license after cessation of operations. During the course of the demolition, all the effluent sources except storm water will be eliminated as a point source discharge. Eventually, upon completion of site restoration the storm water point source will be replaced with a dispersed set of non-point source discharges to the ocean and much more of the storm water will be retained onsite when hardscape is replaced with vegetated and more permeable soil

   a. **Saltwater Pump Intake.** Now that the Facility is retired along with the main steam condensers and the main cooling water pumps, the Discharger seeks to also retire the existing saltwater pumps. Instead of operating the existing two saltwater pumps with a combined capacity of 49 MGD, the Discharger will install four smaller pumps with a combined capacity of 43.20 MGD. The smaller pumps will allow more sparing use of sufficient quantities of saltwater to flush licensed radioactive materials as well as low-volume wastes through the discharge diffusers.

   b. **Dewatering.** At some point during the decontamination and demolition of Unit 2 and Unit 3, some groundwater dewatering is likely to be required. Those volumes will not be known until the depths of excavation are finalized with the verification of the underground structures that may be required to be removed. A similar volume of groundwater extraction discharge is anticipated to be necessary to control site groundwater contaminated with licensed radioactive materials beneath both Unit 2 and Unit 3. The Future Conditions water balance provided in the ROWD includes 7,500,000 gpd of dewatering fluid to account for each of Units 2 and Units 3 flow that is expected to at least be similar to that dewatering discharge shown in the existing conditions water balance for the North Industrial Area. The Discharger anticipates that additional dewatering flows may be necessary and may be required sometime prior to the expiration of this new combined NPDES.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (Water Code) (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by

the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters.

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of CEQA, (commencing with section 21100) of Division 13 of the Public Resources Code.

C. State and Federal Laws, Regulations, Policies, and Plans

1. **Water Quality Control Plan.** The San Diego Water Board adopted a Water Quality Control Plan for the San Diego Basin (Basin Plan) on September 8, 1994 that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for the Pacific Ocean. The Basin Plan was subsequently approved by the State Water Board on December 13, 1994. Subsequent revisions to the Basin Plan have also been adopted by the San Diego Water Board and approved by the State Water Board. Requirements in this Order implement the Basin Plan. The Basin Plan identifies beneficial uses of ocean waters of the state to be protected as summarized below:

Table F-10. Basin Plan Beneficial Uses

Discharge Points	Receiving Water Name	Beneficial Use(s)
002 and 003	Pacific Ocean	Industrial service supply; navigation; contact water recreation; non-contact water recreation; commercial and sport fishing; preservation of biological habitats of special significance; wildlife habitat; rare, threatened, or endangered species; marine habitat; aquaculture; migration of aquatic organisms; spawning, reproduction, and/or early development; and shellfish harvesting.

2. **Thermal Plan and Clean Water Act Section 316(a).** The State Water Board adopted the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan) on January 7, 1971, and amended this plan on September 18, 1975. This plan contains temperature objectives for coastal waters.

   The Facility's Units 2 and 3 were not under construction when the Thermal Plan was adopted, and therefore, discharges from these facilities are considered new discharges under the Thermal Plan. Provisions of the Thermal Plan applicable to Units 2 and 3 require that their thermal discharges be conveyed to the open ocean, away from shorelines and at a protective distance from Areas of Special Biological Significance (State Water Quality Protection Areas). The Thermal Plan requires that the maximum temperature of thermal discharges from Units 2 and 3 not exceed the natural temperature of the receiving waters by more than 20º F ($\Delta T \leq 20^{\circ}$ F), and that thermal discharges from the Units not result in an increase in the natural water temperature exceeding 4º F at (a) the shoreline, (b) the surface of any ocean substrate, or (c) the ocean surface beyond 1,000 feet from the discharge system.

   On July 31, 1972, the San Diego Water Board adopted Order No. 72-26, granting an exception to the Thermal Plan to allow heat treatment of the Facility Units 2 and 3 cooling water systems for the control of marine fouling organisms. Order No. 72-26 included the following language:

> *The companies may raise the temperature of the cooling water discharge from planned Units 2 and 3 of the San Onofre Generating Station to not more than 125° F for periods of not more than two hours once each five week period for each unit, for purposes of control of marine organism growth in the cooling water system only … Thermal treatment shall be done in such a manner and under such conditions that loss of fish and other marine life is eliminated or minimized, and effects upon ocean water quality is minimized.*

On February 15, 1973, the State Water Board adopted Order No. 73-5, concurring conditionally with San Diego Water Board Order No. 72-26 and requiring the discharger to complete certain studies. Conditions of the State Order were incorporated into San Diego Water Board Order No. 72-26 by addendum on March 6, 1973. Following completion of studies by the Discharger in 1979 and submission of proposed heat treatment operating conditions, the State Water Board adopted Resolution No. 80-95 on December 18, 1980 approving the heat treatment studies and proposed operating criteria for the Facility Units 2 and 3. The resolution required that the heat treatment operating conditions be incorporated into the operating procedures and waste discharge requirements for the generating Units.

The Discharger began steps to justify a second exception to the Thermal Plan in accordance with the requirements of Section 316 (a) of the CWA, because a general loss in cooling efficiency had reduced the Facility Units 2 and 3 from generating full rated power while complying with the 20º F ΔT requirement of the Thermal Plan in 1997.

On February 11, 1998, after conducting a California Environmental Quality Act (CEQA) Initial Study of the requested exception to raise the discharge ΔT for Units 2 and 3 to 25º F and following a public hearing, the San Diego Water Board approved the exception as requested by the Discharger. On April 14, 1999, the State Water Resources Control Board, in Resolution No. 99-028, concurred, finding that the action complied with State and federal requirements for granting an exception to the Thermal Plan's discharge limitation, and approved the San Diego Water Board's action.

The Thermal Plan exception granted by the State Water Board to the Discharger (Pursuant to Resolution No. 99-028) to increase its ΔT limitation from 20 ºF to 25 ºF was based on extensive studies conducted by the Discharger's contractor, FlowScience, in 1994.

The Discharger no longer seeks an exception for the Thermal Plan. Due to the decommissioning of the Facility, the Discharger is no longer discharging elevated thermal waste and no longer performs heat treatments to control biofouling. The Discharger's 2013 Receiving Water Study indicates that there is less than a 4 degree difference in control and ambient station temperature. The data post-shutdown, from August 2013-December 2014 which was used for this analysis, reports a maximum difference of 9ºF between intake and discharge for Discharge Point No.002 and a different of 10º F for Discharge Point No. 003, well below the requirement of 20ºF for the Thermal Plan. This Order no longer implements State Water Board Order No. 99-028. Requirements of this Order implement the Thermal Plan, in its entirety.

3. **California Ocean Plan.** The State Water Board adopted the *Water Quality Control Plan for Ocean Waters of California, California Ocean Plan* (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, 2005, 2009, 2012, and 2015. The State Water Board adopted the latest amendment on May 6, 2015. The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. The Ocean Plan

identifies beneficial uses of ocean waters of the state to be protected as summarized below:

Table F-11. Ocean Plan Beneficial Uses

Discharge Point	Receiving Water	Beneficial Uses
Discharge Point Nos. 002 and 003	Pacific Ocean	Industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; preservation and enhancement of designated Areas of Special Biological Significance (ASBS); rare and endangered species; marine habitat; fish spawning and shellfish harvesting.

In order to protect the beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Requirements of this Order implement the Ocean Plan.

4. **Antidegradation Policy.** Federal regulations at 40 CFR section 131.12 require that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*. Resolution 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The San Diego Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of section 131.12 and State Water Board Resolution 68-16.

5. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 CFR section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

6. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, section 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. section 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state, including protecting rare and endangered species. The discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

D. Impaired Water Bodies on CWA 303(d) List

Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On October 11, 2011 the USEPA gave final approval to California's 2010 section 303(d) List of Water Quality Limited Segments. This 303(d) list includes the Pacific Ocean shoreline within the San Clemente Hydrologic Area at Poche Beach, San Clemente City Beach at Pier and North Beach, and South Capistrano Beach as impaired for enterococcus and total coliform.

The San Clemente Hydrologic Area is included in Resolution No. R9-2010-0001, the *Revised Bacteria TMDLs Project I – Twenty Beaches and Creeks in the San Diego Region* (Revised Bacteria TMDLs Project I). On February 10, 2010 the San Diego Water Board adopted Resolution No. R9-2010-0001, an amendment incorporating Revised Bacteria TMDLs Project I into the San Diego Basin Plan. This TMDL Basin Plan amendment was subsequently approved by the State Water Resources Control Board on December 14, 2010, the Office of Administrative Law (OAL) on April 4, 2011, and the U.S. Environmental Protection Agency (USEPA) on June 22, 2011. Under state law, this TMDL Basin Plan Amendment became fully effective on April 4, 2011, the date of OAL approval.

The discharge from the Facility is outside the defined receiving waters of the TMDL and is therefore not subject to any applicable waste load allocations or regulatory actions based on the TMDL. Due to the relatively low-volume of treatment plant effluent within the combined discharge, degradation to the receiving water is not anticipated.

E. Other Plans, Polices and Regulations

1. Clean Water Act Section 316(b) – Impingement and Entrainment

CWA section 316(b) requires that the location, design, construction, and capacity of cooling water intake structures reflect the Best Technology Available (BTA) for minimizing adverse environmental impacts related to entrainment (drawing organisms into the cooling water system) and impingement (trapping organisms against the intake screens).

On May 4, 2010 the State Water Board adopted a *Statewide Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling* (OTC Policy). The administrative record for the OTC Policy was approved by the Office of Administrative Law (OAL) on September 27, 2010. The OTC Policy became effective on October 1, 2010.

The OTC Policy establishes technology-based standards to implement federal CWA section 316(b) and reduce the harmful effects associated with cooling water intake structures on marine and estuarine life. The OTC Policy applies to existing power plants that currently have the ability to withdraw water from the State's coastal and estuarine waters using a single-pass system, also known as once-through cooling. Closed-cycle wet cooling has been selected as the BTA.

The Policy requires compliance under two alternatives:

a. Track 1, where an owner or operator of an existing power plant must reduce intake flow rate at each unit, at a minimum, to a level commensurate with that which can be attained by a closed-cycle wet cooling system. A minimum 93 percent reduction in intake flow rate for each unit is required for Track 1 compliance, compared to the unit's design intake flow rate. The through-screen intake velocity must not exceed 0.5 foot per second. The installation of closed cycle dry cooling systems meets the intent and minimum reduction requirements of this compliance alternative,

or

b. Track 2, where an owner or operator of an existing power plant demonstrates to the State Water Board's satisfaction that compliance with Track 1 is not feasible, the owner or operator of an existing power plant must reduce impingement mortality and entrainment of marine life for the facility, on a unit-by-unit basis, to a comparable level to that which would be achieved under Track 1, using operational or structural controls, or both.

The State Water Board previously required the Discharger to perform special studies specified in section 3.D.(1) of the Statewide Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (OTC Policy). By letter dated January 9, 2015, the State Water Board waived the requirement to perform the special studies given the decision to permanently shut down the Facility and to immediately reduce intake flows by approximately 96 percent.

2. Storm Water Management

In Water Quality Order 97-03-DWQ, the State Water Board adopted *Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activity, Excluding Construction Activity* (NPDES General Permit No. CAS000001). On June 10, 1997, The State Water Board confirmed coverage and assigned WDID No. 9 375003198 to the entire the Facility. For this reason, industrial storm water discharges from Units 2 and 3 were not covered under Order Nos. R9-2005-0005 and R9-2005-0006. At the Discharger's request, a Notice of Termination was approved by the San Diego Water Board in November 2014, and this Order incorporates provisions covering industrial storm water from the Facility.

3. Nuclear Regulatory Commission

Section 301 of the CWA establishes a broad prohibition against the discharge of pollutants except in compliance with the CWA's permit requirements; and section 502 of the CWA defines "pollutant" to include, among other things, radioactive materials [33 U.S.C. 1362 (6)]. The USEPA, which implements the CWA's prohibition on unauthorized discharges, requires a permit for every discharge of pollutants from a point source to waters of the U.S. through the NPDES permit program. In its implementing regulations, the USEPA also defines "pollutant" to include radioactive materials, but expressly excludes radioactive materials that are regulated under the Atomic Energy Act (AEA) of 1954. The difference in the mandate of the CWA and the USEPA's implementing procedures regarding the regulation of radioactive materials by the NPDES program was addressed by the U. S. Supreme Court in 1976, when citizens groups, concerned about potential discharges of radioactive effluents from nuclear facilities in Colorado, sought clarification of the definition of "pollutant." The U.S. Supreme Court found that since the first AEA was passed, control over the production and use of atomic energy has rested with the Atomic Energy Commission, which became the Nuclear Regulatory Commission (NRC) in 1972. The AEA gives authority to the NRC to regulate three types of radioactive materials: (1) source material, (2) special nuclear material, and (3) byproduct material. Production of atomic energy for industrial and commercial purposes may be undertaken only in accordance with licenses issued by the NRC, which address potential releases of these nuclear materials into the environment. [*Train v. Colorado Public Interest Research Group,. Inc., et al.,* 426 U.S. 1 (1976)] The Court agreed with the USEPA that the USEPA did not have authority to control radioactive materials that are regulated under the AEA through the NPDES permit program. This Order, therefore, does not regulate radioactive materials to the extent that such materials are the responsibility of the NRC pursuant to the AEA. Radioactive materials associated with the fuel source of a nuclear powered electrical generating station, like the Facility, are source material, special nuclear material, or byproduct material, as defined by the AEA, and therefore, not subject to regulation by this Order.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the U.S. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations, 40 CFR section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water.

A. Discharge Prohibitions

1. **Discharge Prohibition III.A** (Discharge of wastes in a manner or to a location not specifically described or regulated by this Order is prohibited).

   This prohibition is retained from Orders R9-2005-0005 and R9-2005-0006 and allows the Discharger to discharge waste only in accordance with the requirements of this Order. It is based on sections 301 and 402 of the federal CWA and section 13263 of the Water Code.

2. **Discharge Prohibition III.B** (Discharge of oil or other residuary petroleum products, except as authorized by effluent limitations contained in this Order or by provision of Division 7 of the Water Code is prohibited).

   This prohibition is retained from Order Nos. R9-2005-0005 and R9-2005-0006.

3. **Discharge Prohibition III.C** (Discharge of polychlorinated biphenyl compounds is prohibited).

   This prohibition is retained from Order Nos. R9-2005-0005 and R9-2005-0006, and a restatement of the applicable effluent limitations guidelines for steam electric power plants at 40 CFR section 423.13(a).

4. **Discharge Prohibition III.D** (A total discharge volume in excess of 56.3 MGD for each Discharge Point Nos. 002 and 003 is prohibited).

   This provision is updated from Order Nos. R9-2005-0005 and R9-2005-0006, and reflects the maximum possible discharge from the Facility as described by the Discharger in its application materials for renewal of its Waste Discharge Requirements.

5. **Discharge Prohibition III.E** (Discharge of chlorine from any single generating unit for more than two hours per day is prohibited).

   This prohibition is retained from Order Nos. R9-2005-0005 and R9-2005-0006 and is a restatement of the applicable effluent limitations guidelines for steam electric power plants at 40 CFR section 423.13(b)(2).

6. **Discharge Prohibition III.F** (The discharge of NIA sewage treatment plant effluent without a ratio of at least 10:1, cooling water to wastewater, is prohibited).

   This prohibition is based on the 2014 Report of Waste Discharge to ensure the expected makeup of the combined effluent does not change beyond that which has been considered during the permit renewal.

7. **Discharge Prohibition III.G** (The discharge of wastewater not in compliance with the Basin Plan Waste Discharge Prohibitions, incorporated in this Order as fully set forth herein, and summarized in Attachment G, is prohibited).

   This prohibition is required by chapter 4 of the Basin Plan. The discharge prohibitions in the Basin Plan are applicable to any person, as defined by section 13050(c) of the Water Code, who is a citizen, domiciliary, or political agency or entity of California whose activities in California could affect the quality of waters of the state within the boundaries of the San Diego Region.

8. **Discharge Prohibition III.H** (The discharge of wastewater not in compliance with the Discharge Prohibitions contained in the Ocean Plan, incorporated in this Order as fully set forth herein, and summarized in Attachment G, is prohibited).

   This prohibition is required by the Ocean Plan which specifies the plan is applicable in its entirety to point source discharges to the ocean.

B. Technology-Based Effluent Limitations (TBELs)

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 CFR section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Effluent Limitations Guidelines and Standards for the Steam Electric Point Source Category in 40 CFR part 423.

The CWA requires that technology-based effluent limitations are established based on several levels of controls:

a. Best practicable treatment control technology (BPT) represents the average of the best existing performance by well-operated facilities within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.

b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering a two-part reasonableness test. The first test compares the relationship between the costs of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost and level of reduction of pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests.

d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires USEPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and 40 CFR Section 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the Water Board must consider specific factors outlined in 40 CFR Section 125.3.

2. Applicability of TBELs to Discharges from the NIA Sewage Treatment Plant

In 1976, the San Diego Water Board issued to the Discharger an NPDES Permit, Order No. 76-11, which included effluent limitations for discharges from the wastewater treatment plant to the Pacific Ocean, consistent with federal effluent limitations applicable to publicly-owned wastewater treatment plants. The Discharger petitioned Order No. 76-11 to the State Water Board contending that the permit incorrectly imposed federal effluent limitations applicable to publicly-owned wastewater treatment plants onto their privately-owned wastewater treatment plant without evidence that the more restrictive requirements were necessary for the protection of the beneficial uses identified for the Pacific Ocean. The State Water Board determined that the San Diego Water Board acted appropriately, and the Discharger appealed the decision to the California Supreme Court. The California Supreme Court concluded that the San Diego Water Board's findings in Order No. 76-11 did not provide sufficient evidence to justify adoption of federal secondary treatment requirements on a privately-owned treatment works. As ordered by the judgment, the San Diego Water Board adopted Order No. 82-14, an NPDES permit replacing Order No. 76-11. Table F-12 contains the effluent limitations that were prescribed in Order No. 82-14.

Table F-12. Effluent Limitations from Order No. 82-14 for Treated Domestic Wastewater

Parameter	Units	Effluent Limits		
		Average Monthly	Average Weekly	Instantaneous Maximum
Oil and Grease	mg/L	25	40	75
	lbs/day	21	--	--
Total Suspended Solids (TSS)	mg/L	Not more than 25% of influent TSS		
Settleable Solids	ml/L	1.0	1.5	3.0
Turbidity	NTUs	75	100	225
pH	S.U.	Within the limits of 6.0 to 9.0 at all times		

This Order retains the effluent limitations for treated domestic wastewater, as first promulgated in Order No. 82-14, that was required by the court.

3. Applicable TBELs

a. National Effluent Limitation Guidelines and Standards

Pursuant to section 306(b)(1) of the CWA, USEPA has established standards of performance for the steam electric power point source category (40 CFR section 423.10). Standards of performance for existing facilities (instead of new source performance standards) are applicable to all units of the Facility because their construction was completed or commenced prior to publication of regulations on November 19, 1982, which proposed standards of performance for the industry. The following are applicable technology based standards of performance (BPT and BAT) applicable to the Facility based on the effluent limitations guidelines for existing

sources at 40 CFR section 423. The guidelines do not include standards of performance based on BCT.

i. Standards of Performance Based on BPT

(a) The pH of all discharges, except once-through cooling water, shall be within the range of 6.0 – 9.0 [40 CFR section 423.12(b)(1)].

(b) Low-volume wastes are defined as those wastewater sources for which specific limitations are not established by the effluent limitations guidelines at 40 CFR part 423. The quantity of pollutants discharged from low-volume waste sources shall not exceed the mass quantity determined by multiplying the flow of the low-volume waste sources times the concentration as specified in Table F-12 [40 CFR section 423.12(b)(3)].

Table F-13. Effluent Limitation Guidelines for Low-volume Waste

Pollutant	Daily Maximum (mg/L)	30 Day Average (mg/L)
Total Suspended Solids	100	30
Oil and Grease	20	15

(c) The quantity of pollutants discharged in metal cleaning wastes shall not exceed the quantity determined by multiplying the flow of metal cleaning wastes times the concentration as specified in Table F-13 [40 CFR section 423.12(b)(5)]:

Table F-14. Effluent Limitation Guidelines for Metal Cleaning Waste

Pollutant	Daily Maximum (mg/L)	30 Day Average (mg/L)
Total Suspended Solids	100	30
Oil and Grease	20	15
Iron, Total Recoverable	1.0	1.0
Copper, Total Recoverable	1.0	1.0

(d) At the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as concentration-based limitations instead of the mass-based limitations required above consistent with 40 CFR section 423.12(b)(11).

Order Nos. R9-2005-0005 and R9-2005-0006 established mass-based limitations. However, due to the changing flow-volumes anticipated over the decommissioning process, mass-based effluent limitations may be inappropriate, thus these limitations are expressed as concentration-based effluent limitations.

ii. Standards of Performance Based on BAT

(a) There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid [40 CFR section 423.13(a)].

(b) The quantity of pollutants discharged in once-through cooling water from each discharge point shall not exceed the quantity determined by

multiplying the flow of once-through cooling water from each discharge point times the concentration as specified in Table F-14 [40 CFR section 423.13(b)(1)]:

Table F-15. Effluent Limitation Guidelines for Total Residual Chlorine

Pollutant	Maximum Concentration (mg/L)
Total Residual Chlorine	0.2

(c) Total residual chlorine may not be discharged from any single generating unit for more than two hours per day unless the Discharger demonstrates to the permitting authority that discharge for more than two hours per day is required for macroinvertebrate control [40 CFR section 423.13(b)(2)]. The duration of each chlorination cycle shall not exceed 25 minutes.

(d) At the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as concentration-based limitations instead of the mass-based limitations required above consistent with 40 CFR section 423.12(b)(11).

b. Ocean Plan TBELs

Table 2 of the Ocean Plan prescribes TBELs for grease and oil, suspended solids, settleable solids, turbidity and pH that apply to industrial discharges for which effluent limitations have not been established pursuant to sections 301, 302, 304, or 306 of the CWA. Compliance with the Table 2 effluent limitations is the minimum level of treatment acceptable under the Ocean Plan and defines reasonable treatment and waste control technology applicable to industrial discharges.

As described above, discharges from the Facility are subject to effluent limitations guidelines for existing sources at 40 CFR part 423. Therefore the technology-based effluent limitations contained in Table 2 of the Ocean Plan are not applicable to the combined discharge from the Facility.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

CWA section 301(b) and 40 CFR section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

Section 122.44(d)(1)(i) of 40 CFR requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance under CWA Section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the Ocean Plan.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the Basin Plan. The beneficial uses applicable to the coastal waters of the Pacific Ocean contained in the Basin Plan are summarized in section III.C.1 of this Fact Sheet. The Basin Plan includes both narrative and numeric water quality objectives applicable to the receiving waters.

b. For all ocean waters of the State, the Ocean Plan establishes the beneficial uses summarized in section III.C.3 of this Fact Sheet. The Ocean Plan also includes water quality objectives for the ocean receiving water for bacterial characteristics, physical characteristics, chemical characteristics, biological characteristics, and radioactivity. Table 1 of the Ocean Plan establishes numeric water quality objectives that are applicable to all discharges within the jurisdiction of the Ocean Plan.

As described further in section IV.C.3 below, and in accordance with the Ocean Plan requirements, a reasonable potential analysis (RPA) was conducted for the Facility's discharges to the Pacific Ocean using available data from August 2013 through December 2014. Constituents that were reported in detectable concentrations in the effluent were compared to the applicable water quality objectives from Table 1 of the Ocean Plan. These criteria were used in conducting the RPA for this Order. The Pacific Ocean background concentrations that were used in the RPA were obtained from Table 3 of the Ocean Plan.

c. The Thermal Plan establishes water quality objectives for discharges of Thermal and Elevated Temperature Waste to Coastal and Interstate Waters and Enclosed Bays and Estuaries. Thermal waste is defined as "Cooling water and industrial process water used for the purpose of transporting heat." Elevated temperature waste is defined as "Liquid, solid, or gaseous material including thermal waste discharge at a temperature higher than the natural temperature of receiving water. The Discharger continues to discharge thermal waste, thus effluent limitations for thermal wastes have been implemented consistent with the requirements of the Thermal Plan.

3. Determining the Need for WQBELs

Consistent with Order Nos. R9-2005-0005 and R9-2005-0006, effluent limitations have been calculated for all Table 1 pollutants from the Ocean Plan section III.C.8.d. The Ocean Plan describes compliance determination for Table 1 pollutants for dischargers which use a large volume of ocean water for once through cooling and states:

"Due to the large total volume of power plant and other heat exchange discharges, special procedures must be applied for determining compliance with Table 1 objectives on a routine basis. Effluent concentration values (Ce) shall be determined through the use of equation 1 considering the minimal probable initial dilution of the combined effluent (in-plant waste streams plus cooling water flow). These concentration values shall then be converted to mass emission limitations as indicated in equation 3. The mass emission limits will then serve as requirements

applied to all inplant waste streams taken together which discharge into the cooling water flow, except that limits for total chlorine residual, acute (if applicable per Section (3)(c)) and chronic toxicity and instantaneous maximum concentrations in Table 1 shall apply to, and be measured in, the combined final effluent, as adjusted for dilution with ocean water. The Table 1 objective for radioactivity shall apply to the undiluted combined final effluent."

Consistent with the requirements of the Ocean Plan for dischargers which use a large volume of ocean water for once through cooling, water quality-based effluent concentration limitations have been established, applicable to the combined discharge through Discharge Point Nos. 002 and 003, for total chlorine residual, chronic toxicity, and for all toxic chemicals requiring instantaneous maximum limitations for protection of marine aquatic life. In addition, mass emission limitations, applicable to the combined flow of low-volume (in-plant) wastes, are established for all Table 1 pollutants.

Maximum mass emission limitations for toxics in the combined low-volume (in-plant) discharges, from Units 2 and 3 are based on the total maximum low-volume waste stream flows (cooling water volumes are not factored into the calculations). The mass emission limitations calculations utilized a combined low-volume flow of 5.48 MGD in conjunction with a dilution of 10:1 and the water quality objectives listed in Table 1 of the Ocean Plan.

Pursuant to 40 CFR 423, Effluent Limitations Guidelines for the Steam Electric Power Generating Point Source Category, treated domestic wastewater or metal cleaning wastes are not categorized as low-volume wastewaters. For this Facility, the combined low-volume discharges include the following individual waste streams:

- Makeup Demineralizer System
- Radwaste System
- Plant Drains (Building Sump)
- Intake Structure Sump
- Concrete Cutting Cooling Water
- Dewatering Discharges

The need for effluent limitations based on water quality objectives in Table 1 of the Ocean Plan was re-evaluated for all pollutants for the combined discharge and the low-volume wastes. Determining the "reasonable potential" for a discharged pollutant to exceed an objective, was done in accordance with the following: 40 CFR section 122.44(d); *USEPA Technical Support Document for Water Quality-based Toxics Control* (TSD; EPA/505/2-90-001, 1991); and the Ocean Plan Reasonable Potential Analysis Amendment which was adopted by the State Water Board on October 16, 2012.

The statistical approach combines knowledge of effluent variability (as estimated by a coefficient of variation) with the uncertainty due to a limited number of effluent data to estimate a maximum effluent concentration at a high level of confidence. This estimated maximum effluent concentration is based on a lognormal distribution of daily effluent values. The estimated maximum effluent concentration and the reported maximum effluent concentration are adjusted for minimum probable initial dilution and are then compared to the appropriate objective to determine the potential for an exceedance of

that objective and the need for an effluent limitation. According to the Ocean Plan, the reasonable potential analysis can yield three endpoints:

(1) Endpoint 1, an effluent limitation and monitoring are required;

(2) Endpoint 2, an effluent limitation is not required and the San Diego Water Board may require monitoring; and

(3) Endpoint 3, the RPA is inconclusive and monitoring is required. An existing effluent limitation shall be retained unless a permit reopener clause is included to allow inclusion of an effluent limitation if future monitoring establishes reasonable potential to exceed the objectives.

The implementation provisions for Table 1 in section III.C of the Ocean Plan specify that the minimum initial dilution is the lowest average initial dilution within any single month of the year. Dilution estimates are to be based on observed waste flow characteristics, observed receiving water density structure, and the assumption that no currents of sufficient strength to influence the initial dilution process flow across the discharge structure. Before establishing a dilution credit for a discharge, it must first be determined if, and how much, receiving water is available to dilute the discharge.

The minimum initial dilution factor (Dm) determined for use in Order Nos. R9-2005-0005 and R9-2005-0006 was 10 to 1. This 10 to 1 dilution factor has been used for the discharges from this Facility since 1989. There is no information or study available to indicate that the Dm of 10 to 1 based on the 1989 analysis of dilution is no longer valid in the vicinity of the discharge. Therefore the Dm of 10 to 1 will be retained from Order Nos. R9-2005-0005 and R9-2005-0006 and applied to WQBELs established herein.

Conventional pollutants of total suspended solids, oil and grease, settleable solids, turbidity, and pH were not considered as part of the RPA. TBELs for these pollutants are included in this Order as described in section IV.B of this Fact Sheet.

Using the RPcalc 2.2 software tool developed by the State Water Board for conducting reasonable potential analyses, the San Diego Water Board conducted a RPA for the constituents listed in Table 1 of the Ocean Plan. Discharges starting in August of 2013 are representative of the current conditions of the Facility as it is decommissioned. Since discharges can be routed from Unit 2 and 3 to either Discharge Point Nos. 002 or 003, and the fact that limited data to properly represent discharges post shut down in August 2013 is available, data for Unit 2 (Discharge Point No. 002) and Unit 3 (Discharge Point No. 003) were combined.

a. Discharge Point 002 and 003 (Combined Discharge)

Effluent data representing the combined discharge from the Facility (Discharge Point 002 and 003). The 2014 H2 Semi-Annual SMR was used in this RPA. A minimum probable initial dilution of 10 to 1 was considered in this evaluation. A summary of the RPA results is provided below:

Table F-16. Summary of RPA Results – Discharge Point 002 and 003 (Combined Discharge)

Parameter	Units	n[1]	MEC[2]	Most Stringent Criteria	Background	RPA Endpoint[3]
Protection of Marine Aquatic Life						
Arsenic	µg/L	2	<25	8[4]	3[5]	3
Cadmium, Total Recoverable	µg/L	2	<4	1[4]	0	3

Parameter	Units	n[1]	MEC[2]	Most Stringent Criteria	Background	RPA Endpoint[3]
Chromium, Total Recoverable	µg/L	2	<2	2[4]	0	3
Copper, Total Recoverable	µg/L	2	<12	3[4]	2[5]	3
Lead, Total Recoverable	µg/L	2	<19	2[4]	0	3
Mercury, Total Recoverable	µg/L	2	<0.3	0.04[4]	0.0005[5]	3
Nickel, Total Recoverable	µg/L	2	<10	5[4]	0	3
Selenium, Total Recoverable	µg/L	2	<26	15[4]	0	3
Silver, Total Recoverable	µg/L	2	<3	0.7[4]	0.16[5]	3
Zinc, Total Recoverable	µg/L	2	<24	20[4]	8[5]	3
Cyanide (as CN)	µg/L	2	<20	1[4]	0	3
Total Residual Chlorine	µg/L	128	80	2[6]	0	1
Ammonia-N	µg/L	10	10,500	600[4]	0	1
Chronic Toxicity	Tu_c	10	3.13	1[7]	0	3
Phenolic compounds (non-chlorinated)[8]	µg/L	2	<1	30[4]	0	3
Chlorinated phenolics[9]	µg/L	2	<1	1[4]	0	3
Endosulfans	µg/L	2	<0.05	0.009[4]	0	3
Endrin	µg/L	2	<0.1	0.002[4]	0	3
HCH	µg/L	2	<0.1	0.004[4]	0	3

1 Number of data points available for the RPA.
2 Maximum Effluent Concentration Reported. If there is a detected value, the highest reported value is summarized in the table. If there are no detected values, the lowest MDL is summarized in the table. Note that the reported MEC does not account for dilution. The RPA does account for dilution; therefore it is possible for a parameter with an MEC in exceedance of the most stringent criteria not to present a RP (i.e., Endpoint 2).
3 End Point 1 – RP determined, limit required, monitoring required.
End Point 2 – Discharger determined not to have RP, monitoring may be established.
End Point 3 – RPA was inconclusive, carry over previous limitations if applicable, and establish monitoring.
4 Based on the 6-Month Median in Table 1 of the Ocean Plan.
5 Background concentrations contained in Table 3 of the Ocean Plan.
6 Based on the water quality objective in the Ocean Plan (Table 1) that apply to intermittent discharges not exceeding two hours.
7 Based on the Daily Maximum in Table 1 of the Ocean Plan.
8 Non-chlorinated phenolic compounds represent the sum of 2,4-dimethylphenol, 4,6-dinitro-2-methylphenol, 2,3-dinitrophenol, 2-methylphenol, 4-methylphenol, 2-nitrophenol, 4-nitrophenol, and phenol.
9 Chlorinated phenolic compounds represent the sum of 4-chloro-3-methylphenol, 2-chlorophenol, pentachlorophenol, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol.

b. Discharge Points 001-E and 001-F, 002-D through 002-M, and 003-D through 003-M) (Combined Low-volume Miscellaneous Discharges)

Effluent data representing the low-volume waste discharges from the Facility provided in the Discharger's Report of Waste Discharge and provided in the Discharger's Report of Waste Discharge and monitoring reports from the 2014 Annual SMR were used in the RPA. A minimum probable initial dilution of 10 to 1 was considered in this evaluation. A summary of the RPA results is provided below:

Table F-17. Summary of RPA Results – Combined, Low-volume Miscellaneous Discharges

Parameter	Units	n[1]	MEC[2]	Most Stringent Criteria	Background	RPA Endpoint[3]
Protection of Marine Aquatic Life						
Arsenic	µg/L	2	9.8	8[4]	3[5]	3
Cadmium, Total Recoverable	µg/L	2	<0.18	1[4]	0	3
Chromium, Total Recoverable	µg/L	2	<2	2[4]	0	3
Copper, Total Recoverable	µg/L	2	59	3[4]	2[5]	1
Lead, Total Recoverable	µg/L	2	3.3	2[4]	0	2
Mercury, Total Recoverable	µg/L	2	0.00004	0.04[4]	0.0005[5]	3
Nickel, Total Recoverable	µg/L	2	3.8	5[4]	0	2
Selenium, Total Recoverable	µg/L	2	0.63	15[4]	0	3
Silver, Total Recoverable	µg/L	2	0.2	0.7[4]	0.16[5]	3
Zinc, Total Recoverable	µg/L	2	66	20[4]	8[5]	3
Cyanide (as CN)	µg/L	2	<20	1[4]	0	3
Residual Chlorine	µg/L	2	<100	31.6[4]	0	3
Ammonia-N	µg/L	2	380	600[4]	0	3
Phenolic compounds (non-chlorinated) [10]	µg/L	2	<0.36	30[4]	0	3
Chlorinated phenolics[11]	µg/L	2	<0.27	1[4]	0	3
Endosulfans	µg/L	2	<0.02	0.009[4]	0	3
Endrin	µg/L	2	<0.002	0.002[4]	0	3
HCH	µg/L	2	<0.005	0.004[4]	0	3
Protection of Human Health – Noncarcinogens						
Acrolein	µg/L	2	<2.6	220[8]	0	3
Antimony	µg/L	2	5.5	1,200[8]	0	3
Bis(2-chloroethoxy)methane	µg/L	2	<0.27	4.4[8]	0	3
Bis(2-chloroisopropyl)ether	µg/L	2	<0.38	1,200[8]	0	3
Chlorobenzene	µg/L	2	<0.31	570[8]	0	3
Chromium III	µg/L	--	--	190,000[8]	0	--
di-n-butyl phthalate	µg/L	2	<0.25	3,500[8]	0	3
Dichlorobenzenes	µg/L	2	<0.3	5,100[8]	0	3
Diethyl phthalate	µg/L	2	<0.57	33,000[8]	0	3
Dimethyl phthalate	µg/L	2	<0.22	820,000[8]	0	3
4,6-Dinitro-2-methylphenol	µg/L	1	<5	220[8]	0	3
2,4-Dinitrophenol	µg/L	2	<1	4.0[8]	0	3
Ethylbenzene	µg/L	2	<0.38	4,100[8]	0	3
Fluoranthene	µg/L	2	<0.13	15[8]	0	3
Hexachlorocyclopentadiene	µg/L	2	<5	58[8]	0	3
Nitrobenzene	µg/L	2	<0.23	4.9[8]	0	3
Thallium	µg/L	2	<0.17	2[8]	0	3
Toluene	µg/L	2	<0.48	85,000[8]	0	3
Tributyltin	µg/L	2	<0.004	0.0014[8]	0	3
1,1,1-Trichloroethane	µg/L	2	<0.23	540,000[8]	0	3
Protection of Human Health – Carcinogens						

Parameter	Units	n[1]	MEC[2]	Most Stringent Criteria	Background	RPA Endpoint[3]
Acrylonitrile	µg/L	2	<1.5	0.10[8]	0	3
Aldrin	µg/L	2	<0.002	0.000022[8]	0	3
Benzene	µg/L	2	<0.47	5.9[8]	0	3
Benzidine	µg/L	2	<5	0.000069[8]	0	3
Beryllium	µg/L	2	<0.57	0.033[8]	0	3
Bis(2-chloroethyl)ether	µg/L	2	<0.42	0.045[8]	0	3
Bis(2-ethylhexyl)phthalate	µg/L	2	<0.59	3.5[8]	0	3
Carbon tetrachloride	µg/L	2	<0.38	0.90[8]	0	3
Chlordane	µg/L	2	<0.05	0.000023[8]	0	3
Chlorodibromomethane	µg/L	2	10	8.6[8]	0	3
Chloroform	µg/L	2	4	130[8]	0	3
DDT	µg/L	2	<0.003	0.00017[8]	0	3
1,4-Dichlorobenzene	µg/L	2	<0.36	18[8]	0	3
3-3'-Dichlorobenzidine	µg/L	2	<0.59	0.0081[8]	0	3
1,2-Dichloroethane	µg/L	2	<0.25	28[8]	0	3
1,1-Dichloroethylene	µg/L	2	<0.07	0.9[8]	0	3
Dichlorobromomethane	µg/L	2	4.8	6.2[8]	0	3
Dichloromethane	µg/L	2	<0.43	450[8]	0	3
1,3-Dichloropropene	µg/L	2[9]	<0.31	8.9[8]	0	3
Dieldrin	µg/L	2	<0.002	0.00004[8]	0	3
2,4-Dinitrotoluene	µg/L	2	<0.1	2.6[8]	0	3
1,2-Diphenylhydrazine	µg/L	2	<0.1	0.16[8]	0	3
Halomethanes	µg/L	2	2	130[8]	0	3
Heptachlor	µg/L	2	<0.002	0.00005[8]	0	3
Heptachlor epoxide	µg/L	2	<0.003	0.00002[8]	0	3
Hexachlorobenzene	µg/L	2	<0.35	0.00021[8]	0	3
Hexachlorobutadine	µg/L	2	<0.56	14[8]	0	3
Hexachloroethane	µg/L	2	<0.25	2.5[8]	0	3
Isophorone	µg/L	2	<0.64	730[8]	0	3
N-Nitrosodimethylamine	µg/L	2	<5	7.3[8]	0	3
N-Nitrosodi-n-propylamine	µg/L	2	<0.58	0.38[8]	0	3
N-Nitrosodiphenylamine	µg/L	2	<5	2.5[8]	0	3
PAHs	µg/L	2	<0.31	0.0088[8]	0	3
PCBs	µg/L	2	<0.40	0.000019[8]	0	3
TCDD Equivalents	µg/L	2	3.3E-6	3.9E-9[8]	0	3
1,1,2,2-Tetrachloroethane	µg/L	2	<0.42	2.3[8]	0	3
Tetrachloroethylene	µg/L	2	<0.49	2.0[8]	0	3
Toxaphene	µg/L	2	<0.5	0.00021[8]	0	3
Trichloroethylene	µg/L	2	<0.31	27[8]	0	3
1,1,2-Trichloroethane	µg/L	2	<0.34	9.4[8]	0	3
2,4,6-Trichlorophenol	µg/L	2	<1	0.29[8]	0	3
Vinyl Chloride	µg/L	2	<0.47	36[8]	0	3

[1] Number of data points available for the RPA.
[2] Maximum Effluent Concentration Reported. If there is a detected value, the highest reported value is summarized in the table. If there are no detected values, the lowest MDL is summarized in the table. Note that the reported MEC does not account for dilution. The RPA does account for dilution; therefore it is possible for a parameter with an MEC in exceedance of the most stringent criteria not to present a RP (i.e., Endpoint 2).
[3] End Point 1 – RP determined, limit required, monitoring required.
End Point 2 – Discharger determined not to have RP, monitoring may be established.
End Point 3 – RPA was inconclusive, carry over previous limitations if applicable, and establish monitoring.
[4] Based on the water quality objective in the Ocean Plan (Table 1) that applies to intermittent discharges not exceeding two hours.
[5] Background concentrations contained in Table 3 of the Ocean Plan.
[6] Based on the Daily Maximum in Table 1 of the Ocean Plan.
[7] Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3 Section 30253 of the California Code of Regulations. Levels of radioactivity that exceed the applicable criteria are not expected in the discharge.
[8] Based on 30-Day Average in Table 1 of the Ocean Plan.
[9] Represents one sample each for cis-1,3-Dichloropropene and trans-1,3-Dichloropropene (each reported as ND at <5.0 µg/L).
[10] Non-chlorinated phenolic compounds represent the sum of 2,4-dimethylphenol, 4,6-dinitro-2-methylphenol, 2,3-dinitrophenol, 2-methylphenol, 4-methylphenol, 2-nitrophenol, 4-nitrophenol, and phenol.
[11] Chlorinated phenolic compounds represent the sum of 4-chloro-3-methylphenol, 2-chlorophenol, pentachlorophenol, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol.

4. WQBEL Calculations

a. From Table 1 water quality objectives of the Ocean Plan, effluent limitations calculated according to the following equation for all pollutants, except for acute toxicity (if applicable) and radioactivity:

Ce = Co + Dm (Co – Cs) where,

Ce = the effluent limitation (µg/L)
Co = the water quality objective to be met at the completion of initial dilution (µg/L)
Cs = background seawater concentration (µg/L)
Dm = minimum probable initial dilution expressed as parts seawater per part wastewater

b. For the Facility, Dm equals 10 based on observed waste flow characteristics, receiving water density structure, and the assumption that that no currents of sufficient strength to influence the initial dilution process flow across the discharge structure. Initial dilution is the process that results in the rapid and irreversible turbulent mixing of the wastewater with the ocean water around the point of discharge.

c. Table 3 of the Ocean Plan establishes background concentrations for some pollutants to be used when determining reasonable potential (represented as “Cs”). In accordance with Table 1 implementing procedures, Cs equals zero for all pollutants not established in Table 3. The background concentrations provided in Table 3 are summarized below:

Table F-18. Ocean Plan Table 3 Pollutant Background Concentrations

Parameter	Background Seawater Concentration
Arsenic	3 µg/L
Copper	2 µg/L
Mercury	0.0005 µg/L
Silver	0.16 µg/L

Parameter	Background Seawater Concentration
Zinc	8 µg/L

d. Example WQBEL Calculation for Copper

The following provides example calculations for effluent limitations for copper for the combined discharge (Discharge Point Nos. 002 and 003). The water quality objectives from the Ocean Plan for copper are as follows:

Parameter	Units	6-Month Median	Daily Maximum	Instantaneous Maximum
Copper	µg/L	13	112	310

Using the equation, Ce = Co + Dm(Co – Cs), effluent limitations are calculated as follows:

<u>Copper</u>

Ce = 3 + 10(3 – 2) = 13 µg/L (6-Month Median)
Ce = 12 + 10(12 – 2) = 112 µg/L (Daily Maximum)
Ce = 30 + 10(30 – 2) = 310 µg/L (Instantaneous Maximum)

Based on the implementing procedures described above, effluent limitations for the combined discharge to Discharge Point Nos. 002 and 003, and for the combined in-plant low-volume waste were calculated.

e. Example WQBEL Calculations for Total Residual Chlorine (for Combined Discharges from Discharge Point Nos. 002 and 003).

The following provides example calculations for effluent limitations for Total Residual Chlorine for the combined discharge (Discharge Point Nos. 002 and 003). The water quality objectives from the Ocean Plan for Total Residual Chlorine are as follows:

Parameter	Units	6-Month Median	Daily Maximum	Instantaneous Maximum
Total Residual Chlorine	µg/L	2	8	60

Using the equation, Ce = Co + Dm(Co – Cs), effluent limitations are calculated as follows:

<u>Total Residual Chlorine</u>

Ce = 2 + 10 (2 – 0) = 22 µg/L (6-Month Median)
Ce = 8 + 10 (8 – 0) = 88 µg/L (Daily Maximum)
Ce = 60 + 10 (60 – 0) = 660 µg/L (Instantaneous Maximum)

These limits are consistent with Order Nos. R9-2005-0005 and R9-2005 0006.

5. Whole Effluent Toxicity (WET)

The Basin Plan defines toxicity as the adverse response of organisms to chemicals or physical agents.

The Basin Plan establishes a narrative water quality objective for toxicity:

> *"All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life."*

The San Diego Water Board has considered the following information in developing toxicity monitoring and effluent limitations:

- Discussions with USEPA Region 9;
- USEPA's June 2010 guidance document titled *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document, An Additional Whole Effluent Toxicity Statistical Approach for Analyzing Acute and Chronic Data* (EPA 833-R-10-003);
- USEPA's June 2010 guidance document titled *National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document, An Additional Whole Effluent Toxicity Statistical Approach for Analyzing Acute and Chronic Data* (EPA 833-R-10-004);
- The narrative water quality for objective for toxicity contained in the *Water Quality Control Plan for the San Diego Basin* (Basin Plan);
- The numeric water quality objectives for toxicity contained in the *Water Quality Control Plan for Ocean Waters of California* (Ocean Plan); and
- Applicable state and federal regulations.

The Ocean Plan establishes a daily maximum chronic toxicity objective of 1.0 TUc = 100/NOEC, using a five-concentration hypothesis test, and a daily maximum acute toxicity objective of 0.3 TUa = 100/LC50, using a point estimate model.

In 2010, USEPA endorsed the peer-reviewed Test of Significant Toxicity (TST) two-concentration hypothesis testing approach in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010) as an improved hypothesis-testing tool to evaluate data from USEPA's toxicity test methods. The TST hypothesis testing approach more reliably identifies toxicity in relation to the chronic (0.25 or more) and acute (0.20 or more) mean responses of regulatory management concern, than the current NOEC hypothesis-testing approach used in the Ocean Plan. TST results are also more transparent than the point estimate model approach used for toxicity in the Ocean Plan that is not designed to address the question of statistical uncertainty around the modeled toxicity test result in relation to the effect level of concern. The TST is the superior approach for addressing statistical uncertainty when used in combination with USEPA's toxicity test methods and is implemented in federal permits issued by USEPA Region 9. Use of the TST approach to establish the numeric effluent limitations is expected to be protective of the Ocean Plan's numeric toxicity objectives.

In 2011, to demonstrate the advantages of the TST approach, the State Water Board conducted a "test drive" comparing results obtained using TST with results obtained using the NOEC statistical approach currently being used in California's WET program. Using data from a number of sources, the analysis identified the number of tests passing or failing, the range of effects associated with passing or failing, and the within-test

variability associated with these tests using the TST and the NOEC approach. A sample was declared toxic if there was greater than or equal to a 25 percent effect in a chronic test at the permitted IWC. The sample is declared non-toxic if there was less than or equal to 10 percent effect at the IWC.

The results of the test drive indicated that, overall, use of the TST approach declared as toxic 2.9 percent of all tests with less than 25 percent effect (i.e., not truly toxic) , while the NOEC analysis declared a greater number of those tests toxic, 5.3 percent. The TST analysis also declared as toxic 0.1 percent of all tests with an effect less than or equal to 10 percent (i.e., truly non-toxic) compared to 2.6 percent declared toxic by the NOEC analysis. For chronic toxicity tests using marine species, the ability for the TST approach to more consistently identify truly toxic samples as toxic and truly non-toxic samples as non-toxic is even more pronounced.

The implementation of toxicity monitoring requirements and effluent limitations for discharges are based on the TST statistical approach which was developed by USEPA and assesses the whole effluent toxicity measurement of wastewater effects on specific test organisms' ability to survive, grow, and reproduce. This approach is a statistical method that uses hypothesis testing techniques based on research and peer-reviewed publications. The approach examines whether an effluent at the critical concentration and a control within a WET test differ by an unacceptable amount (the amount that would have a measured detrimental effect on the ability of aquatic organisms to thrive and survive).

Organism response to the effluent and control are unlikely to be exactly the same, even if no toxicity is present. They might differ by such a small amount that even if statistically significant, it would be considered negligible biologically. A more useful approach could be to rephrase the null hypothesis, "Is the mean response in the effluent less than a defined biological amount?" The Food and Drug Administration has successfully used that approach for many years to evaluate drugs, as have many researchers in other biological fields. In that approach, the null hypothesis is stated as the organism response in the effluent is less than or equal to a fixed fraction (b) of the control response (e.g., 0.75 of the control mean response):

Null hypothesis: Treatment mean ≤ b * Control mean

To reject the null hypothesis above means the effluent is considered non-toxic. To accept the null hypothesis means the effluent is toxic.

Before the TST null hypothesis expression could be recommended by USEPA, certain Regulatory Management Decisions (RMDs) were needed, including what effect level in the effluent is considered unacceptably toxic and the desired frequency of declaring a truly negligible effect within a test non-toxic.

In the TST approach, the b value in the null hypothesis represents the threshold for unacceptable toxicity. For chronic toxicity, the USEPA made the RMD that the b value is set at 0.75, which means that a 25 percent effect (or more) at the Instream Waste Concentration (IWC) is considered evidence of unacceptable chronic toxicity. For acute toxicity, the b value is set at 0.80.

USEPA's RMDs for the TST method are intended to identify unacceptable toxicity most of the time when it occurs, while also minimizing the probability that the IWC is declared toxic when in fact it is truly acceptable. Additional RMDs by USEPA to achieve this objective were made regarding acceptable maximum false positive (β using a TST approach) and false negative rates (α using a TST approach).

In the TST approach, the RMDs are defined as follows:

1. Declare a sample toxic between 75 – 95 percent of the time ($0.05 \leq \alpha \leq 0.25$) when there is unacceptable toxicity.
2. Declare an effluent non-toxic no more than 5 percent of the time ($\beta \leq 0.05$) when the effluent effect at the critical effluent concentration is 10 percent.

USEPA used valid toxicity data from approximately 2,000 WET tests to develop and evaluate the TST approach. The TST approach was tested using nine different whole effluent toxicity test methods comprising twelve biological endpoints and representing most of the different types of WET test designs in use. More than one million computer simulations were used to select appropriate alpha error rates for each test method that also achieved USEPA's other RMDs for the TST approach.

Effluent limitations are established using the TST "pass" "fail" approach as well as a percent effect.

Chronic Pass: A test result that rejects the null hypothesis (Ho) below is reported as "Pass" in accordance with the TST approach:

Ho: Mean response (100 percent effluent) ≤ 0.75 × Control mean response

Chronic Fail: A test result that does not reject the null hypothesis (Ho) above is reported as "Fail" in accordance with the TST approach.

Percent Effect: The percent effect at the IWC is calculated for each test result using the following equation:

$$\% \text{ Effect at IWC} = \frac{\text{Mean Control Response - Mean IWC Response} * 100}{\text{Mean Control Response}}$$

Instream Waste Concentration (IWC): The concentration of a toxicant or effluent in the receiving water after mixing (the inverse of the dilution factor). A discharge of 100 percent effluent will be considered the IWC whenever mixing zones or dilution credits are not authorized by the applicable Water Board.

A Maximum Daily Effluent Limitation (MDEL) for chronic toxicity is established for combined discharged via Discharge Point Nos. 002 and 003. The MDEL is exceeded and a violation will be flagged when a toxicity test during routine monitoring results in a "fail" in accordance with the TST approach and the percent effect is greater than or equal to 0.50.

A percent effect of 0.50 for chronic toxicity has been incorporated into the MDEL. The decision to conduct a Toxicity Identification Evaluation (TIE) is based upon consideration of multiple factors such as the magnitude and persistence of toxicity. The magnitude of toxicity present in storm water is an important consideration because a moderate to high level of toxicity typically yield more successful results. Usually, TIEs can be successfully conducted on samples producing at least 50 percent effect (e.g., >50% mortality or reduction in reproduction), and this value is recommended for general use in selecting samples for TIEs. Effective TIEs can also be conducted with less toxic samples (e.g., >25% effect), but there is a greater chance of the TIE being inconclusive due to changes in toxicity with storage or variability in response (Norberg-King et al. 2005). A percent effect of 50% for chronic toxicity has been incorporated into the MDEL to facilitate a successful TIE.

The IWC for these discharges are established at 10% effluent. Allowances for dilution and a different IWC may be made at the discretion of the San Diego Water Board. Because the San Diego Water Board has no documentation to support a different IWC, the IWC is defined as 10 percent effluent. This definition of IWC is consistent with other San Diego Water Board's NPDES permitted discharges.

The San Diego Water Board finds that the application of USEPA's TST method with the 50% effect for chronic toxicity is scientifically defendable and appropriate for the determination of compliance with the Basin Plan's narrative objective for toxicity. As such, toxicity monitoring requirements, analysis, and effluent limitations are established in this Order based on USEPA's TST method and a 50% effect for chronic toxicity. Taken together, these refinements of using chronic toxicity instead of acute toxicity for wastewater and using the TST approach with the appropriate percent effect clarifies the requirements for toxicity analyses, provides the Discharger with the positive incentive to generate high quality data, and affords greater protection of aquatic life.

Implementing provisions at section III.C.4.c.(3) of the Ocean Plan states that the San Diego Water Board may require acute toxicity testing in addition to chronic toxicity monitoring for ocean waste discharges with minimum initial dilution factors ranging from 100:1 to 350:1 as necessary for the protection of beneficial uses of ocean waters. This Order does not contain effluent limitations or monitoring requirements for acute toxicity because the minimum initial dilution factor for the Facility discharge is 10:1.

Three-species screening tests were performed for chronic toxicity for Units 2 and 3 in December of 2014 submitted with the 2014 Quarter 4 SMR. There were no toxic effects observed with the Unit 2 discharge sample in any of the three bioassay tests conducted. All three tests have a no observed effect concentration (NOEC) of 32% effluent (the highest concentration tested) and a chronic toxic unit (TUc value of less than 3.13. For the kelp test in the Unit 2 sample, there was an Interrupted dose-response effect observed in the 5.6% effluent concentration. There was a 14% decrease to the growth endpoint in this concentration and this was found to be statistically significant. However, the three concentrations above this all showed no effects. Thus, the NOEC Is reported as the highest concentration (32% effluent) that shows no observed effect. For the kelp test, there was no difference with germination, but there was a significant decrease (18.5% compared to the control) observed with the growth endpoint.

There were no toxic effects observed with the Unit 3 discharge sample in any of the three bioassay tests conducted. All three tests for the Unit 3 sample have a no observed effect concentration (NOEC) of 32% effluent (the highest concentration tested) and a chronic toxic unit (TUc,) value of less than 3.13.

Since none of the three species in the Unit 2 and Unit 3 sample had a significant percent effect, no single species stood out as being the most sensitive. Based on historical results, giant kelp is recommended as the sensitive species for routine quarterly monitoring for both Units 2 and 3. The kelp test also satisfies quarterly monitoring requirements. Both Unit 2 and 3 receiving water (intake) was also tested for comparison. There were no significant differences observed between the receiving water and the lab control in any of the three species tested.

D. Final Effluent Limitation Considerations

1. Anti-Backsliding Requirements

Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 CFR section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions

require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with some allowable exceptions.

Limitations for the following internal outfall waste stream have been removed as they are no longer in use now that the Facility is in the decommissioning process: 001-D Radwaste, 002-C and 003-C Blowdown Processing; 002-F and 003-F Polishing Demineralizer System; 002-G and 003-G Steam Generator Blowdown; and 002-H and 003-H Hotwell Overboard.

Heat discharge specifications reflect operating conditions approved by the State Water Board in Resolution No. 80-95 have been removed as heat treatments are no longer necessary due to the lower flow rates during decommissioning activities.

Order Nos. R9-2005-0005 and R9-2005-0006 established an instantaneous maximum limit for intermittent chlorine sources based on variable water quality objectives. The chlorine instantaneous maximum water quality objectives are based on chlorination cycle time, determined in accordance with the equation from footnote c of Ocean Plan Table 1. This limit was not carried over as intermittent discharges of chlorine were discontinued in August 2013 when the Facility shut down.

Discharges of pollutants to waters of the U.S. shall maintain compliance with the MDEL for chronic toxicity. The MDEL is based on the outcome of the TST approach and the resulting percent effect at the IWC in accordance with section VII. of this Order. This chronic toxicity effluent limitation based on the TST is at least as stringent as the limitation based on TUc.

2. Antidegradation Policies

WDRs for the Discharger must conform with federal and state antidegradation policies provided at 40 CFR section 131.12 and in State Water Board Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*. The antidegradation policies require that beneficial uses and the water quality necessary to maintain those beneficial uses in the receiving waters of the discharge shall be maintained and protected, and, if existing water quality is better than the quality required to maintain beneficial uses, the existing water quality shall be maintained and protected unless allowing a lowering of water quality is necessary to accommodate important economic and social development or consistent with maximum benefit to the people of California. When a significant lowering of water quality is allowed by the San Diego Water Board, an antidegradation analysis is required in accordance with the State Water Board's Administrative Procedures Update (July 2, 1990), *Antidegradation Policy Implementation for NPDES Permitting*.

a. Technology-based Effluent Limitations

This Order does not retain the mass-based technology-based effluent limitation for individual in-plant low-volume waste at internal outfalls, but rather for combined in-plant low-volume waste. The discharge volume of these wastewaters are variable based on the operations and decommissioning of the Facility, and therefore limits are more appropriately applied to the combined flow waste streams and anticipated to be more protective of water quality. Therefore, the discharge is in compliance with the antidegradation policy.

b. Water Quality-based Effluent Limitations

The limitations are consistent with Order Nos. R9-2005-0005 and R9-2005-0006. Therefore, the discharge is in compliance with the antidegradation policy.

3. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. Technology-based restrictions on these pollutants are discussed in section IV.B.2 in this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. These limitations are not more stringent than required by the CWA.

Water quality-based effluent limitations have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. The procedures for calculating the individual water quality-based effluent limitations are based on the Ocean Plan, which was approved by USEPA on February 14, 2006. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 CFR section 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

The WQBEL for chronic toxicity is based on the USEPAs TST. This Order's restrictions are no more stringent than required to implement the requirements of the CWA.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Recycling Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

CWA section 303(a-c), requires states to adopt water quality standards, including criteria necessary to protect beneficial uses. The San Diego Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states "water quality objectives must protect the most sensitive of the beneficial uses which have been designated for a water body." The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies.

The Ocean Plan establishes water quality objectives for California's ocean waters and provides the basis for regulation of wastes discharged into the California's coastal waters. The Ocean Plan is applicable to both point and non-point source discharges. The State Water Board adopts the Ocean Plan and, in conjunction with six coastal Regional Water Quality Control Boards, implements and interprets the Ocean Plan.

This Order contains receiving surface water limitations which incorporate Basin Plan and Ocean Plan numerical and narrative water quality objectives for bacterial, physical, chemical, biological, and radioactivity characteristics of ocean waters.

B. Groundwater – Not Applicable

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR section 122.42, are provided in Attachment D to the order.

40 CFR sections 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 40 CFR section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

This Order may be re-opened and modified, revoked and reissued, or terminated in accordance with the provisions of 40 CFR parts 122, 123, 124, and 125. The San Diego Water Board may reopen the permit to modify permit conditions and requirements. Causes for modifications include the promulgation of new regulations, modification in sludge use or disposal practices, or adoption of new regulations by the State Water Board or the San Diego Water Board, including revisions to the Basin Plan.

2. Special Studies and Additional Monitoring Requirements

a. Toxicity Reduction Requirements

Implementing provisions at section III.C.10 of the Ocean Plan requires permits to include the following: (1) a requirement to conduct a TRE if the discharge consistently exceeds its toxicity effluent limitation, and (2) a provision requiring a discharger to take all reasonable steps to reduce toxicity once the source of toxicity is identified.

b. Toxicity Reduction Evaluation (TRE)

The Discharger shall develop a TRE work plan in accordance with TRE procedures established by the USEPA in the following guidance manuals.

i. *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070).

ii. *Toxicity Identification Evaluation, Phase I* (EPA/600/6-91/005F).

iii. *Methods for Aquatic Toxicity Identification Evaluations, Phase II* (EPA/600/R92/080).

iv. *Methods for Aquatic Toxicity Identification Evaluations, Phase III* (EPA/600/R92/081).

The Discharger shall submit the TRE work plan to the San Diego Water Board within 180 days of the adoption of this Order. The TRE work plan shall be subject to the approval of the San Diego Water Board and shall be modified as directed by the San Diego Water Board.

3. Best Management Practices and Pollution Prevention

Section 402 of the CWA and USEPA regulations at 40 CFR section 122.44(k) authorize the requirement of best management practices, or BMPs, in NPDES permits. BMPs are measures for controlling the generation of pollutants and their release to waterways. These measures are important tools for waste minimization and pollution prevention.

Consistent with the provision included in Order Nos. R9-2005-0005 and R9-2005-0006, this Order requires the Discharger to continue to maintain a BMP Plan that incorporates practices to achieve the objectives and specific requirements in the permit. The BMP Plan must be revised as new practices are developed for the Facility. The BMP Plan must be designed to prevent, or minimize the potential for, the release of toxic or hazardous pollutants, including any such pollutants from ancillary activities to waters of the U.S. The BMP Plan shall be consistent with the general guidance contained in the USEPA *Guidance Manual for Developing Best Management Practices (BMPs)* (EPA 833-B-93-004). The Discharger shall maintain the BMP Plan in an up-to-date condition and shall amend the BMP Plan in accordance with the USEPA guidance whenever there is a change in facility design, construction, operation, or maintenance, which materially affects the potential for discharge from the Facility of significant amounts of hazardous or toxic pollutants into waters of the U.S.

4. Construction, Operation, and Maintenance Specifications – Not Applicable

5. Special Provisions for Municipal Facilities (POTW's Only) – Not Applicable

6. Other Special Provisions – Once-Through Cooling (OTC) Water Implementation Plan and Schedule

a. Once-Through Cooling Water Implementation Plan and Schedule

The OTC Policy requires compliance under two alternatives:

(1) Under Track 1, of the OTC Policy, an existing power plant must reduce the intake flow rate to a level commensurate with closed-cycle wet cooling such that the through-screen intake velocity does not exceed 0.5 foot per second.

(2) Track 2, of the OTC Policy, is available to existing plants that demonstrate that Track 1 is infeasible, and such plants must reduce impingement and entrainment by 90 percent unless the California Independent System Operator, California Energy Commission, or Public Utilities Commission determines there is continued need for the plant, in which event the State Water Board will hold a hearing to consider suspension of the compliance date. In the interim, the OTC Policy requires plants to implement measures to mitigate impingement and entrainment impacts.

Per section 3.D of the OTC Policy, the Discharger was required to undertake special studies to investigate alternatives for the Facility to meet OTC Policy requirements, specifically to evaluate the Discharger's ability to achieve compliance with Track 1 requirements. In addition, the Discharger is also required to comply with immediate and interim requirements per section 2.C of the OTC Policy including the installation

of a large organism exclusion device (LOED) on its offshore intake structure, by October 1, 2011.

The Discharger submitted a response on April 1, 2011, indicating that it could not comply with the October 2011 deadline for installation of the LOED because of challenges with identifying a design that would meet safety operating requirements and a need for more time to conduct further feasibility studies. A request for a time extension for compliance with the LOED requirements to October 1, 2013 was subsequently submitted on August 24, 2011. The State Water Board concurred with the extension in a letter dated October 19, 2011 that it would not pursue enforcement until December 31, 2012 to allow the Discharger to come into compliance with the LOED installation. Additional correspondence from the Discharger in September 22, 2011 requested clarification on the applicability of an LOED to the auxiliary offshore intakes due to nuclear safety concerns. In response, by letter dated June 13, 2012, the State Water Board requested additional documentation and evaluation to support the safety concerns, and provided additional time for full compliance by February 1, 2014 with the installation of LOEDs at the offshore intake and the auxiliary offshore intakes if no waiver of the OTC Policy amendment was pursued.

In July of 2013, the Discharger notified the State Water Board that it will permanently retire Units 2 and 3 and is no longer engaged in power generation. The State Water Board responded on July 17, 2013 concurring that based on the information that the Discharger submitted, the LOED requirement is suspended to allow the Discharger to focus resources on the elimination of cooling water intake and the permanent retirement of Units 2 and 3, and a report detailing the Discharger's plans for elimination of ocean cooling water be submitted by November 30, 2013. The Discharger submitted the required report on November, 27, 2013 and requested reconsideration of the OTC Policy requirements with regards to the special studies and the installation of LOEDs, and also requested confirmation that due to the cessation of normal operations, the reduction of intake flows meets Track 1 compliance. The State Water Board reviewed the report and concluded that it does provide justification with the required information to show that the Discharger has reduced intake flows by approximately 96%. Therefore the Facility is in compliance with Track 1 of the OTC Policy. In addition, in its response dated January 8, 2014, the State Water Board concurred that the reduction in intake flows rate and intake velocity exempted the Discharger from having to complete the special studies since the Facility is essentially in compliance under Track 1, so the special studies were no longer required. However, the requirement to install LOEDs was still considered as suspended, contingent on submittal of additional information.

On February 28, 2014, the Discharger submitted a request to continue suspension of the LOED requirements and proposed to submit a *Marine Mammal and Turtle Entrainment Report* by December 2014, and based on the results of that report have the State Water Board make a determination if the Facility still needs to comply with the LOED requirements. The *Marine Mammal and Turtle Entrainment Report* was submitted on December 22, 2014. The State Water Board responded on January 9, 2015 that per information in the report, the Discharger will continue to require ocean water for dilution purposes and thus as long as ocean water intake continues, it is still subject to applicable requirements of the OTC Policy and must install the LOEDs no later than December 31, 2016. Therefore, the Discharger is required to comply with the following time schedule to come into compliance with the LOED requirements:

Table F-19. Schedule of Compliance with the OTC Policy's LOED

Task	Compliance Date
1. Submit status on OTC compliance for LOED Installation at intake structures	January 15, 2016
2. Submit progress Report on LOED compliance actions.	July 1, 2016
3. Achieve full compliance with LOED requirements.	December 31, 2016

b. OTC Policy Immediate and Interim Requirements:

The OTC Policy requires the immediate and interim requirements:

i. As of October 1, 2011, the owner or operator of an existing power plant with an offshore intake shall install large organism exclusion devices having a distance between exclusion bars of no greater that nine inches, or install other exclusion devices, deemed equivalent by the State Water Board.

ii. As of October 1, 2011, any unit that is not directly engaged in power-generating activities or critical system maintenance shall cease intake flows unless it has been demonstrated to the State Water Board that a reduced minimum flow is necessary for operations

iii. Commencing on October 1, 2015, the Discharger shall implement measures to mitigate interim impingement and entrainment impacts until full compliance is achieved by December 31, 2022. The Discharger may comply with this requirement by:

(a) Demonstrating to the State Water Board's satisfaction that the Discharger is compensating for the interim impingement and entrainment impacts through existing mitigation efforts, including any projects that were required by state or federal permits as of October 1, 2010, or

(b) Demonstrating to the State Water Board's satisfaction that interim impacts are compensated for by the Discharger by providing funding to the California Coastal Conservancy which will work with the California Ocean Protection Council to fund an appropriate mitigation project.

(c) Developing and implementing a mitigation project for the facility, approved by the State Water Board, which will compensate for the interim impingement and entrainment impacts. Such a project must be overseen by an advisory panel of experts convened by the State Water Board.

By letter dated January 9, 2015, the State Water Board determined that the Discharger has demonstrated compliance with the OTC Policy's Track 1 requirements due to the drastic reduction in flow; but the Discharger still needs to comply with the LOED requirements of the OTC Policy.

Although the Facility is no longer generating power, the Discharger has indicated it will continue to utilize ocean water during the decommissioning process, and the reduced intake water for cooling is still a critical safety requirement needed for the operation of the onsite spent nuclear fuel pools, and also to comply with this Order for effluent discharges, primarily sewage.

By letter dated April 1, 2011, the Discharger has demonstrated compliance with the OTC Policy's interim mitigation requirements through the ongoing SONGS Marine

Mitigation Program required by and monitored through the California Coastal Commission.

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 CFR sections 122.41(h), (j)-(*l*), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the San Diego Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program (MRP), Attachment E of this Order establishes monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

Influent monitoring for the NIA sewage treatment plant is necessary to characterize the influent and evaluate compliance with the applicable removal percentage requirements for TSS. Influent monitoring will address the following question:

(1) Does the discharger meet the percent removal requirements established in the Order?

B. Effluent Monitoring

Pursuant to the requirements of 40 CFR section 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations/performance goals. Effluent monitoring is necessary to address the following questions:

(1) Does the effluent meet permit effluent limits thereby ensuring that water quality standards are achieved in the receiving water?

(2) What is the mass of the constituents that are discharged annually?

(3) Is the effluent concentration or mass changing over time?

(4) What is the volume of effluent being discharged from the Facility.

(5) What is the toxicity in the discharge as compared to the receiving water.

Consistent with Order Nos. R9-2005-0005 and R9-2005-0006, Order No. R9-2015-0073 requires the annual collection of separate flow weighted composite sample of low-volume wastewaters originating from NIA, and Units 2 and 3 as discharged to Discharge Point No. 002 or 003.

The low-volume wastewaters from NIA that will be composited with the Units 2 or 3 low-volume wastewaters include yard drains and dewatering discharges.

The proportion of each waste stream to be added to the composite sample must be based on the actual (preferred) or estimated flow rates for the day on which samples are collected.

Monitoring requirements for the following internal outfall waste stream have been removed as they are no longer in use now that the Facility is in the decommissioning process: 001-D Radwaste, 002-C and 003-C Blowdown Processing. 002-F and 003-F Polishing Demineralizer System, 002-G and 003-G Steam Generator Blowdown, 002-H and 003-H Hotwell Overboard. The effluent monitoring requirements for Discharge Point Nos. 004 (fish return system) and 005 (across the beach discharge) have been removed as they are no longer in operation and were not included in the ROWD.

C. Whole Effluent Toxicity Testing Requirements

Toxicity tests are another method used to assess risk to aquatic life. These tests assess the overall toxicity of the effluent, including the toxicity of unmeasured constituents and/or synergistic effects of multiple constituents. Toxicity monitoring is intended to address the following questions:

(1) Does the effluent meet permit effluent limits for toxicity thereby ensuring that water quality standards are achieved in the receiving water?

(2) If not:
   (a) Are unmeasured pollutants causing risk to aquatic life?
   (b) Are pollutants in combinations causing risk to aquatic life?

Chronic toxicity effluent monitoring is established for combined discharges though Discharge Point Nos. 002 and 003 based on USEPA's TST with a 50% percent effect, as discussed above in section IV.C.5 of this Fact Sheet, in order to evaluate compliance with effluent limitations.

This Order requires the Discharger to conduct additional toxicity testing for exceedances of the toxicity effluent limitations. If the additional tests demonstrate toxicity, the Discharger is required to submit a Toxicity Reduction Evaluation (TRE) Work plan in accordance with USEPA guidance which shall include further steps taken by the Discharger to investigate, identify, and correct the causes of toxicity; actions the Discharge will take to mitigate the effects of the discharge and prevent the recurrence of toxicity; and a schedule for these actions. This provision also includes requirements to initiate the TRE/TIE process if the results of toxicity testing exceed the effluent limitation for chronic toxicity.

D. Receiving Water Monitoring

The receiving water and sediment monitoring requirements set forth below are designed to measure the effects of the discharge on the receiving ocean waters. The overall receiving water monitoring program is intended to answer the following questions:

(1) Does the receiving water meet water quality standards?

(2) Are the receiving water conditions getting better or worse over time?

(3) What is the relative contribution of the Facility discharge to pollution in the receiving water?

1. Continuous Temperature Monitoring

Temperature monitoring is necessary to evaluate compliance with the requirements of the Thermal Plan. Order No. R9-2015-0073 retains the requirements of Order Nos. R9-2005-0005 and R9-2005-0006 for temperature profiling.

2. Aerial Photographic Surveys

The Ocean Plan includes a water quality objective which requires that natural light not be significantly reduced at any point outside the zone of initial dilution as the result of the discharge of waste.

Historically, the San Diego Water Board has reviewed study data from the offshore transmissivity monitoring program and in-plant studies on effluent turbidity and concurs with Discharger's assertion that the Units 2 and 3 discharges do not cause appreciable

reductions in light transmission beyond the zone of initial dilution. The San Diego Water Board finds that the Units 2 and 3 discharges are compliant with the Ocean Plan prohibition against such adverse discharges. Order No. R9-2015-0073 retains the requirements of Order Nos. R9-2005-0005 and R9-2005-0006 for aerial photographic surveys of the discharge area with an option to conduct the aerial photographic surveys concurrently with the kelp bed monitoring.

3. Trawling Surveys

Order Nos. R9-2005-0005 and R9-2005-0006 required quarterly offshore trawling at 20, 40, and 60 ft. isobaths at three offshore locations. Collected fish are to be counted and identified, and sex determination is required for selected species. Quarterly otter trawl fish surveys in 2013 caught a total of 11,196 fish representing 46 species offshore of the coast between San Mateo Point and Don Light, including directly offshore of the Facility. Abundances of the three dominant species (White Croaker, Speckled Sanddab, and California Lizardfish) accounted for 88% of the total 2013 catch. The aggregate abundance of these three species reached a record high, while the aggregate abundance of the remaining species declined for the second straight year to the third lowest point since 1995. Historically, the aggregate abundance of the top three species was less than the aggregate total of the remaining species, but since 2009 the aggregate abundance of the top three species has exceeded the aggregate total of all other species combined. This coincides with a large White Croaker recruitment that was recorded at multiple sites in southern California. The community changes over years, including during full operation and during the outage beginning in January 2012.

Order No. R9-2015-0073 retains the requirement from Order Nos. R9-2005-0005 and R9-2005-0006 to conduct trawling surveys.

4. Kelp Densities

The fixed quadrant sampling program was conducted in June, September, and December 2013 in the San Onofre Kelp Forest (SOK) and San Mateo Kelp Forest, while the random quadrant sampling was done concurrently during the June and December 2013 surveys for both areas. Kelp densities are reported as similar to 2012.

Order Nos. R9-2005-0005 and R9-2005-0006 require identification and counting of giant kelp plants greater than 2 meters three times per year at six sampling sites in the SOK. Substrate is to be qualitatively described. Random sampling is also required on a semiannual basis. Analysis of kelp bed densities has occurred since 1978 in stations located throughout the SOK; Order No. R9-2015-0073 retains the requirements of Order Nos. R9-2005-0005 and R9-2005-0006 for kelp density monitoring.

5. Water Quality Measurements

Order Nos. 2005-0005 and 2005-0006 required quarterly monitoring of dissolved oxygen (DO) and pH at the surface of 10 receiving water stations. In 2013, DO concentrations in receiving water were similar to the results at the control stations in all quarterly monitoring events. Order No. R9-2015-0073 retains the requirements of Order Nos. R9-2005-0005 and R9-2005-0006 for pH and dissolved oxygen monitoring.

E. Groundwater – Not Applicable

F. Regional Monitoring Requirements

Regional ocean water monitoring provides information about the sources, fates, and effects of anthropogenic contaminants in the coastal marine environment necessary to make assessments over large areas. The large scale assessments provided by regional monitoring

describe and evaluate cumulative effects of all anthropogenic inputs and enable better decision making regarding protection of beneficial uses of ocean waters. Regional monitoring data assists in the interpretation of core monitoring studies by providing a more accurate and complete characterization of reference conditions and natural variability. Regional monitoring also leads to methods standardization and improved quality control through intercalibration exercise. The coalition, implementing regional monitoring, enables sharing of technical resources, trained personnel and associated costs. Focusing these resources on regional issues and developing a broader understanding of pollutants effects in ocean waters enables the development of more rapid and effective response strategies. Based on all of these considerations the San Diego Water Board supports regional approaches to monitoring ocean waters.

The Discharger shall, as directed by the San Diego Water Board, participate with other regulated entities, other interested parties, and the San Diego Water Board in development and implementation of new and improved monitoring and assessment programs for ocean waters in the San Diego Region and discharges to those waters. These programs shall be developed and implemented so as to:

(1) Determine the status and trends of conditions in ocean waters in the San Diego Region with regard to beneficial uses, e.g.,

   i. Are fish and shellfish safe to eat?

   ii. Is water quality safe for swimming?

   iii. Are ecosystems healthy?

(2) Identify the primary stressors causing or contributing to conditions of concern;

(3) Identify the major sources of the stressors causing or contributing to conditions of concern; and

(4) Evaluate the effectiveness (i.e., environmental outcomes) of actions taken to address such stressors and sources.

1. Kelp Bed Monitoring Requirements

Kelp consists of a number of species of brown algae. Along the central and southern California coast, giant kelp (*Macrocystis pyrifera*) is the largest species colonizing rocky, and in some cases sandy, subtidal habitats. Giant kelp is an important component of coastal and island communities in southern California, providing food and habitat for numerous animals. Monitoring of the kelp beds is necessary to answer the following questions:

(1) What is the maximum areal extent of the coastal kelp bed canopies each year?

(2) What is the variability of the coastal kelp bed canopy over time?

(3) Are coastal kelp beds disappearing? If yes, what are factors that could contribute to the disappearance?

(4) Are new coastal kelp beds forming?

Order Nos. R9-2005-0005 and R9-2005-0006 required the discharger to participate with other ocean discharges in the San Diego Region in an annual photographic survey of regional kelp beds. Using vertical aerial infrared photography, the purpose of the annual survey is to compare the extent of coastal kelp bed coverage areas to historical surveys. Significant, persistent losses must be investigated by divers to determine probable

reasons for the loss. Order No. R9-2015-0073 retains the requirements of Order Nos. R9-2005-0005 and R9-2005-0006 for kelp bed monitoring.

G. Other Monitoring Requirements

The cooling water intake monitoring, and fish impingement/entrainment monitoring requirements set forth below are designed to ensure compliance with State and Federal Regulations. The overall intake monitoring program is intended to answer the following questions:

(1) Does the intake water meet water quality standards and Thermal Plan objectives?

(2) What is the relative contribution of the Facility's thermal waste discharge in the receiving water?

(3) Is the Facility in compliance with the State's OTC Policy requirements?

(4) What is the status of the Once-Through Cooling Water Compliance Schedule? Has the Discharger completed immediate and/or interim requirements?

(5) Are the Large Organism exclusion devices (LOEDs) functioning properly?

(6) Is the Facility in compliance with CWA section 316(b) requirements?

Cooling water intake monitoring, and fish impingement/entrainment monitoring requirements monitoring shall be conducted as specified below.

1. Fish Impingement/Entrainment Monitoring

Order Nos. R9-2005-0005 and R9-2005-0006 require that fish impingement monitoring be performed at the Facility Units 2 and 3 intake structures during heat treatments and for at least one continuous 24-hour period per quarter during normal operations. The discharger is required to determine the total weight and number of each fish species removed from the traveling bar racks and screens during each monitoring event, as well as the length and sex in a representative sample.

During 2013, an estimated 735,398 fish weighing 2,122 kg and representing 29 fish species were impinged at the Facility as reported by the 2013 Receiving Water Report. Compared to the long-term means, the 2013 totals represent a 69% reduction in abundance and a 97% reduction in biomass. The average fish size (0.003 kg) was the smallest record since 1983. Queenfish (*Seriphus politus*), White Croaker (*Genyonemus lineatus*), and Northern Anchovy (*Engraulis mordax*) accounted for 97% of the 2013 impingement abundance. These same three species historically dominate the impingement during an average year. Queenfish and White Croaker regional populations have both declined substantially over the years. Units 2 and 3 were taken out of service in January 2012 and permanently retired in June 2013. As a result, circulating water pumps were shut down on July 10, 2013 (Unit 3) and September 30, 2013 (Unit 2). Cooling water pumps with smaller capacity remained operational, but the seawater withdrawals declined substantially after the circulating water pumps were shut down. No impingement surveys could be conducted after September 30 because the traveling screens could not be operated. Between January and July 2013, seawater pumps at both units commonly circulated 600-900 million gallons of seawater per day, which was also a reduction from the nearly 1.2 billion gallons each seawater system was capable of circulating. Lastly, no waste heat was generated while the station was out of service; therefore it was not possible to conduct heat treatments of the cooling water systems. The reduced seawater intake, inability to perform heat treatments, and reductions in the sizes of fish populations in southern California resulted in reduced impingement in 2013.

Reduced impingement mortality resulting from the sharply reduced seawater intake volumes likely had no substantive effect on the coastal fish populations.

Order No. R9-2015-0073 requires visual assessment of fish impingement or entrainment and modifies the requirements of Order Nos. R9-2005-0005 and R9-2005-0006 for fish entrainment monitoring at the Unit 2 and 3 and intake structures.

2. Cooling Water Intake Monitoring

Cooling water intake monitoring is necessary to characterize the intake water and evaluate compliance with applicable water quality-based and thermal plan objectives. Intake monitoring requirements are consistent with those established in the previous orders.

VIII. PUBLIC PARTICIPATION

The San Diego Water Board considered the issuance of WDRs that will serve as an NPDES permit for the Facility. As a step in the adoption process of this Order, the San Diego Water Board developed a Tentative Order and encouraged public participation in the adoption process by providing a period of a minimum of 30 days for public review and comment on the Tentative Order.

A. Notification of Interested Parties

The San Diego Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided an opportunity to submit written comments and recommendations. The Tentative Order was posted on the San Diego Water Board website and emailed to the Discharger and all known interested parties on September 25, 2015**.**

The public had access to the agenda and any changes in dates and locations through the San Diego Water Board's website at: http://www.waterboards.ca.gov/sandiego/.

B. Written Comments

Interested persons were invited to submit written comments concerning the Tentative Order as provided through the notification process. Written comments or e-mailed comments were required to be received in the San Diego Water Board office at 2375 Northside Drive, Suite 100, San Diego, CA 92108.

To be fully responded to by staff and considered by the San Diego Water Board, the written or e-mailed comments were due at the San Diego Water Board office by 5:00 p.m. on October 26, 2015.

C. Public Hearing

The San Diego Water Board held a public hearing on the Tentative Order during its regular Board meeting on the following date and time and at the following location:

Date:	December 16, 2015
Time:	9:00 AM
Location:	Padre Dam Municipal Water District Customer Service Center, Board Room 9300 Fanita Parkway Santee, California

Interested persons were invited to attend. At the public hearing, the San Diego Water Board heard testimony, pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested in writing.

D. Reconsideration of Waste Discharge Requirements

Any aggrieved person may petition the State Water Board to review the decision of the San Diego Water Board regarding the final WDRs. The petition must be received by the State Water Board at the following address within 30 calendar days of the San Diego Water Board's action:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

For instructions on how to file a petition for review, see:
http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml

E. Information and Copying

The Report of Waste Discharge, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the San Diego Water Board by calling (619) 516 -1990.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the Order should contact the San Diego Water Board, reference this Facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Ben Neill at (619) 516-1990.

ATTACHMENT G – OCEAN PLAN AND BASIN PLAN PROHIBITIONS

I. Ocean Plan Discharge Prohibitions

a. The Discharge of any radiological chemical, or biological warfare agent or high-level radioactive waste into the ocean is prohibited.

b. Waste shall not be discharged to designated Areas of Special Biological Significance except as provided in Chapter III.E. of the Ocean Plan.

c. Pipeline discharge of sludge to the ocean is prohibited by federal law; the discharge of municipal and industrial waste sludge directly to the ocean, or into a waste stream that discharges to the ocean, is prohibited. The discharge of sludge digester supernatant directly to the ocean, or to a waste stream that discharges to the ocean without further treatment, is prohibited.

d. The by-passing of untreated wastes containing concentrations of pollutants in excess of those of Table 2 or Table 1 [of the Ocean Plan] is prohibited.

II. Basin Plan Discharge Prohibitions

a. The discharge of waste to waters of the State in a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in Water Code section 13050, is prohibited.

b. The discharge of waste to land, except as authorized by WDRs or the terms described in Water Code section 13264 is prohibited.

c. The discharge of pollutants or dredged or fill material to waters of the U.S. except as authorized by an NPDES permit or a dredged or fill material permit (subject to the exemption described in Water Code section 13376) is prohibited.

d. Discharges of recycled water to lakes or reservoirs used for municipal water supply or to inland surface water tributaries thereto are prohibited, unless this San Diego Water Board issues an NPDES permit authorizing such a discharge; the proposed discharge has been approved by the State of California Department of Public Health and the operating agency of the impacted reservoir; and the discharger has an approved fail-safe long-term disposal alternative.

e. The discharge of waste to inland surface waters, except in cases where the quality of the discharge complies with applicable receiving water quality objectives, is prohibited. Allowances for dilution may be made at the discretion of the San Diego Water Board. Consideration would include stream flow data, the degree of treatment provided and safety measures to ensure reliability of facility performance. As an example, discharge of secondary effluent would probably be permitted if stream flow provided 100:1 dilution capability.

f. The discharge of waste in a manner causing flow, ponding, or surfacing on lands not owned or under the control of the discharger is prohibited, unless the discharge is

authorized by the San Diego Water Board.

g. The dumping, deposition, or discharge of waste directly into waters of the State, or adjacent to such waters in any manner which may permit it being transported into the waters, is prohibited unless authorized by the San Diego Water Board.

h. Any discharge to a storm water conveyance system that is not composed entirely of storm water is prohibited unless authorized by the San Diego Water Board. [The federal regulations, 40 CFR 122.26(b)(13), define storm water as storm water runoff, snow melt runoff, and surface runoff and drainage. 40 CFR 122.26(b)(2) defines an illicit discharge as any discharge to a storm water conveyance system that is not composed entirely of storm water except discharges pursuant to an NPDES permit and discharges resulting from firefighting activities.] [Section 122.26 amended at 56 FR 56553, November 5, 1991; 57 FR 11412, April 2, 1992].

i. The unauthorized discharge of treated or untreated sewage to waters of the State or to a storm water conveyance system is prohibited.

j. The discharge of industrial wastes to conventional septic tank/ subsurface disposal systems, except as authorized by the terms described in Water Code section 13264, is prohibited.

k. The discharge of radioactive wastes amenable to alternative methods of disposal into the waters of the State is prohibited.

l. The discharge of any radiological, chemical, or biological warfare agent into waters of the State is prohibited.

m. The discharge of waste into a natural or excavated site below historic water levels is prohibited unless the discharge is authorized by the San Diego Water Board.

n. The discharge of sand, silt, clay, or other earthen materials from any activity, including land grading and construction, in quantities which cause deleterious bottom deposits, turbidity or discoloration in waters of the State or which unreasonably affect, or threaten to affect, beneficial uses of such waters is prohibited.