Attachment 2
Diablo Canyon Power Plant
NPDES Discharge Descriptions
April 2003

Discharge Description Table

* Key: For descriptions of items numbered 1, 2, and 3 under the Potential Constituent column, see **Note 2** below

#	Discharge Name	Description	Volume	Discharge Frequency	* Potential Constituents
001	Once-through Cooling Water	The total flow volume into Diablo Cove through Outfall 001 is a combination of once-through cooling water that supplies the main steam condensers for Units 1 and 2 and Service Cooling Water (001E), Auxiliary Salt Water Cooling (001B), and miscellaneous in-plant waste streams (001D through 001Q). Biofouling control is accomplished using oxidants. This discharge is primarily seawater	2.65×10^9 gallons per day (GPD)	Continuous	Seawater, sodium bisulfite, sodium hypochlorite, sodium bromide, surfactants (1,2,3, potentially only during maintenance activities)
001B	Auxiliary Salt Water Cooling	Once-through cooling water is used for the Component Cooling Water System (a closed cooling water loop servicing pumps and other loads in the electric generation system). This discharge is primarily seawater.	3.48×10^7 GPD	Continuous	Seawater, sodium hypochlorite (1, potentially only during maintenance activities)
001C	(discharge deleted)				
001D	Liquid radioactive waste treatment system (batch system tanks)	Liquid radioactive waste (LRW) from radioactive systems is collected, treated, and monitored in a LRW treatment system. Some waste collected in this system may be non-radioactive. This system includes storage tanks for radioactive decay, evaporators, activated carbon filters, ion exchangers, and filters to remove radioactive matter. After decay and/or treatment, individual batches of low-level waste are sampled and analyzed to confirm compliance with discharge limits. Upon confirmation they are discharged into the auxiliary saltwater cooling system (001B).	8.0×10^3 GPD	Intermittent, daily	Trace radioactivity below regulatory limits specified in 10 CFR §20 and §50 may be present in the discharge from the LRW system. (1,2,3, potentially only during maintenance activities).
001E	Service Cooling Water	This system provides once-through-cooling water for the Service Cooling Water System (a closed cooling water loop servicing pumps and other loads in the electric	1.24×10^7 GPD	Continuous	Seawater, (1, potentially only during maintenance

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		generation system). This discharge is primarily seawater.			activities)
001F	Turbine Building Sump	Floor drainage from the turbine building, buttress areas and drainage from other sumps, secondary systems, secondary systems chemistry laboratories and firewater system maintenance and testing (see endnote 1), are collected in the turbine building sump prior to treatment. The turbine building sump effluent is treated in an oily water separator or the Wastewater Holding and Treatment (WHAT) system prior to discharge via a separate sump into the once-through cooling water conduit (001). Treatment aids are used, if necessary, to meet discharge requirements.	5.0×10^4 GPD	Intermittent, daily	1,2,3, polyelectrolytes and/or coagulants, potentially only during maintenance activities.
001G	Makeup water system effluent (brine)	Filter backwashes from make-up water pretreatment and treatment systems, and blowdown from the reverse osmosis systems are discharged to the once-through cooling water conduit (001). This wastewater contains filter backwash, concentrated dissolved solids, and water treatment aids.	9.65×10^4 GPD	Continuous	Potentially only trace amounts of sodium bisulfite, sodium hypochlorite, sulfuric acid sequestering agents (2, potentially only during maintenance activities)
001H	Condensate demineralizer regenerant	Waste regenerant liquid from the steam-cycle condensate demineralizers is collected in regenerant waste tanks prior to discharge to the once-through cooling water conduit. The liquid may be neutralized or filtered, if necessary, to meet discharge requirements.	3.33×10^4 GPD	Intermittent, approximately daily	1,2, 3, sodium sulfate, potentially only during maintenance activities
001I	Seawater evaporator Blowdown (non-operational)	Seawater previously was concentrated in the seawater evaporation system and discharged. The evaporator is no longer operational, however, the flowpath is still used infrequently as an alternative path for discharging condensate. Condensate is primarily demineralized water.	0.00×10^0 GPD	Intermittent, rarely	Demineralized water, (1,2, 3, potentially only during maintenance activities)

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#	Discharge Name	Description	Volume	Discharge Frequency	* Potential Constituents
001J	Condensate/ feedwater system	During normal start-up operations, and occasionally during power operations, condensate from the main condenser hot well will be periodically discharged to improve condensate quality in the steam cycle. The discharge is primarily demineralized water.	1.89×10^3 GPD	Intermittent, rarely and during outages	Demineralized water, (1,2, 3, potentially only during maintenance activities)
001K	Condensate dump tank (batch)	Water from the main condenser tube sheet collection trough will be discharged periodically in order to minimize seawater contamination of the condensate during periods of condenser tube sheet leakage. This discharge is primarily demineralized water and seawater, which may result from condenser leakage.	1.44×10^5 GPD	Intermittent, rarely	Demineralized water, seawater, (1,2, 3, potentially only during maintenance activities)
001L	Steam generator blowdown	This normally continuous discharge contains corrosion products and seawater contaminants from condenser tube leakage.	1.47×10^5 GPD	Continuous	Trace amounts of 2, (1, 3 potentially during maintenance activities)
001M	Wastewater holding & treatment system (WHAT)	Water routed to the WHAT system will be periodically discharged. This discharge includes waste water from discharges 001F and 001H requiring further treatment. Treatment may involve coagulation, settling, oil removal, pH adjustment, filtration, or chlorination.	1.25×10^5 GPD	Intermittent, daily or weekly	1,2, 3, sodium hypochlorite, potentially only during maintenance activities
001N	Sanitary wastewater treatment system	Sanitary waste is treated in a package treatment facility, with the normal discharge to the Unit 2 once-through cooling water conduit (001). This is a full-secondary treatment facility. In the event both discharge pumps fail, an alternate discharge path is gravity flowed to the seawater reverse osmosis system discharge (001P). This system is periodically chlorinated to control filamentous growth.	1.21×10^4 GPD	Intermittent, daily	Full secondary treated waste effluent, potentially trace amounts of sodium hypochlorite
001P	Seawater reverse osmosis system blowdown	Blowdown from the seawater reverse osmosis system contains concentrated seawater brine and filter backwash water, with additions of water treatment aids. Blowdown is normally discharged through the intake structure to the	8.37×10^5 GPD	Continuous	Potentially trace amounts of sodium hypochlorite, sodium bisulfite

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#	Discharge Name	Description	Volume	Discharge Frequency	* Potential Constituents
		auxiliary salt water system (001B). Treated domestic sanitary wastes (001N) are discharged to the seawater reverse osmosis system blowdown, in the event of a failure of both discharge pumps.			ferric sulfate sequestering agents (2, potentially only during maintenance activities)
001Q	Intake structure building sumps	Drainage from within the intake structure including the intake sump, intake once-through cooling water system, stored water releases, washwater, and firewater system (see endnote 1), is collected in sumps and normally discharged with the once-through cooling water (001). An alternate flowpath is inside the breakwater adjacent to the intake structure with seawater from screen washing through 002.	7.20×10^4 GPD	Intermittent, daily	Seawater, (1 potentially only during maintenance activities)
002	Screen wash pumps overboard	Excess seawater from the screen wash pumps, drainage from within the once-through cooling water intake structure, and is collected in sumps and discharged inside the breakwater adjacent to the intake structure.	1.76×10^5 GPD	Intermittent, daily	Seawater
003	Intake screen wash	Debris from the ocean is washed from the traveling screens at the Intake Structure. The screen wash water, along with ocean debris, is pumped back to the ocean at a point located on the ocean side of the breakwater. Infrequently, this system may contain oxidants during periods of once-through cooling water chlorination.	3.19×10^6 GPD	Intermittent, daily	Seawater, potentially trace amounts of Sodium hypochlorite, sodium bromide, surfactants
004	Reverse Osmosis discharge	Seawater from the Biolab, pumped through the Reverse Osmosis system (RO), is discharged to the Intake Cove. Seawater is pumped from the intake structure to tanks used for observation and scientific study of marine organisms, then used as source water for the RO, and discharged continuously to the Intake Cove after being processed through the RO. Approximately one-half of the	4.71×10^5 GPD	Continuous	Seawater, rainwater, potentially trace amounts sodium hypochlorite

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#	Discharge Name	Description	Volume	Discharge Frequency	* Potential Constituents
		seawater supplied to the Biolab is filtered through sand filters at line pressure. Filters are backwashed based on pressure differentials and the debris from the ocean is discharged through Discharge 004. This system may be filled with freshwater as a method of biofouling control. It may also contain trace amounts of oxidants from future biofouling control optimization studies. Rainwater from a portion of the plant yard area is collected in a drainage system that occasionally includes. This drainage system includes a 17,000-gallon collection system for the Spill Prevention Control and Countermeasure (SPCC) Plan. This system has a passive oil-water separation system for the containment of transformer oil. The discharge also includes drainage for areas surrounding the hazardous waste storage building, truck bay, firewater storage tank and firewater pump building. The drainage system is collected in a retention basin that once filled, can join the Biolab discharge before entering the intake cove.			
005	Biolab seawater supply pump valve drain (batch)	A drain is provided in the seawater supply valve box for Removal of accumulated rainwater and seawater. Discharge is to Intake Cove.	2.00×10^3 GPD	Intermittent, rarely	Rainwater, seawater
006	Seawater Reverse Osmosis system blowdown drain (batch)	A low-point valve located beside the Intake Structure access road allows the 8” brine line to be drained for repair. Only rare use of the drain during the lifetime of the system is expected. The discharge is to Intake Cove.	4.00×10^3 GPD	Intermittent, rarely	Seawater, Rainwater
007	Screenwash overspray	Overspray from the intake screen washes and rainwater that originates from the area south of the intake structure is discharged into the Intake Cove.	1.46×10^3 GPD	Intermittent, daily	Seawater, rainwater
008	Screenwash overspray	Overspray from the intake screen washes and rainwater that originates from the area south of the intake structure is discharged into the Intake Cove.	1.46×10^3 GPD	Intermittent, daily	Seawater, rainwater

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#	Discharge Name	Description	Volume	Discharge Frequency	* Potential Constituents
009	Biolab/Reverse osmosis supply lines drain	There are two supply lines for the Biolab/Reverse Osmosis plant. Each line has a bypass pipe that discharge into the Intake Cove just south of the boat dock. The seawater supply lines are typically alternated on a regular basis (approximately monthly) so that one can be laid-up dry to control biofouling while the other is in operation. Discharges to the Intake Cove occur during start-up of the Biolab pump and when supply lines are switched.	1.65×10^4 GPD	Intermittent, approximately monthly	Seawater
010	Circulating water pumps backflow (intermittent)	Occasionally, one or both of the circulating water pumps for Unit 1 or Unit 2 may be shut down. When this occurs, water that has been pumped from the intake structure up to the main condensers will flow by gravity back down and out the intake. This discharge is primarily seawater. Chemical feed systems are shut down prior to shutting down cooling water pumps to prevent the discharge of chemicals.	3.00×10^6 GPD	Intermittent, outages	Seawater
011	Screen wash collection sump overflow (intermittent)	Ocean debris accumulates on the traveling screens. This debris is washed off into troughs that feed into the collection sump. Under normal conditions this material is pumped back to the ocean via Discharge 003. However, on occasion, the collection sump pumps become clogged and/or debris loading is extremely high. On these rare occasions, the collection sump fills up with seawater and ocean debris, and then is designed to overflow through an opening in the face of the Intake Structure into the Intake Cove.	7.22×10^6 GPD	Intermittent, rarely	Seawater

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Note1: Under normal operating conditions only sodium bisulfite, sodium hypochlorite, sodium bromide, and surfactants are routinely present at detectable concentrations in 001 and 001B. Less frequently, during maintenance activities, (e.g. metal cleaning), some of the chemicals in Note 2 below may be present in sub-flowpaths that flow into the 001 flowpath (e.g. 001F) at potentially trace detectable concentrations.

Note 2: The following descriptions of potential discharge constituents are referenced by number in the " Potential Constituents" column of the table above:

1. Corrosion inhibitors and biocide agents used in the closed cooling water systems may be present in the discharge due to operation, testing and maintenance activities. Corrosion inhibitors may include: potassium molybdate, potassium nitrite, tolytriazole, potassium tetraborate, sodium hydroxide, potassium dichromate, potassium hydroxide and boric acid. The biocide agents may include glutaraldehyde and isothiazolin. Dispersant that may include: polyglycol and acrylic, sulfonated, or carboxylated polymers; and antifoaming agents that may include polyglycol ester could be used in conjunction with biocides
2. Chemicals used in the feed water system and/or the steam generators, may be present in this discharge due to operation, testing and maintenance activities. These chemicals may include: corrosion inhibitors such as: neutralizing amines and pH control agents (ethanolamine (ETA), dimethylamine (DMA), lithium hydroxide, morpholine, 3-methoxypropyl amine (MPA), 2-amino, 2-methyl propanol (AMP), 5-aminopentanol (5AP), and ammonia), ion exchange regeneration agents (sulfuric acid and sodium hydroxide), reducing agents and oxygen scavengers (hydrazine, diethylhydroxylamine (DEHA), and carbohydrazide), boric acid, and during plant operation
3. Chemicals used in metal cleaning activities for scale/sludge material dissolution, chelation, or softening that may be present in the discharge during outages are solvents (ethylenediaminetetraacetic acid (EDTA) with triethanolamine, ascorbic acid, and surfactant) or scale conditioning agents (ethanoldiamine (EDA), (DMA), dipyridyl, ethanoldiamine (EDA), phenanthroline, and methanol).