



Winston H. Hickox  
Secretary for  
Environmental  
Protection

# State Water Resources Control Board

## Office of Chief Counsel

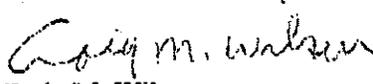
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**TO:** Roger Briggs  
Executive Officer  
Central Coast RWQCB

**FROM:**   
Craig M. Wilson  
Chief Counsel  
**OFFICE OF CHIEF COUNSEL**

**DATE:** April 4, 2001

**SUBJECT:** REGULATION OF MODERNIZED POWER PLANTS UNDER THE  
THERMAL PLAN OBJECTIVES FOR NEW AND EXISTING DISCHARGES

### Background

The purpose of this memo is to discuss certain legal issues involved in regulating modernized power plants under the State Board's Thermal Plan. Duke Energy plans to modernize two of its power plants, Morro Bay Power Plant in San Luis Obispo County (MBPP) and the South Bay Power Plant in San Diego County (SBPP). These plants were built in the 1950's and 1960's and their cooling water discharges are regulated as existing discharges under the Thermal Plan. At SBPP the cooling water discharge occurs at the shoreline of San Diego Bay, which is an enclosed bay. The MBPP discharge is a coastal discharge occurring at the shoreline of southern Estero Bay, which is not an enclosed bay. Duke plans to modernize both plants by completely replacing the existing generation facilities with new systems that will be more efficient. The new facilities will be located at the same site as the old facilities. The existing intakes and outfalls will be used for cooling water.

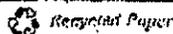
### Issue

Will the discharges from the modernized MBPP and SBPP be considered new or existing discharges under the Thermal Plan?

### Conclusion

As long as there is not a material change in the discharges, they should be considered existing discharges under the Thermal Plan.

*California Environmental Protection Agency*



### Discussion

Thermal Plan Objectives: The designation of cooling water discharges as "new" or "existing" is significant because of the differences in applicable water quality objectives. If a discharge to coastal waters or an enclosed bay is deemed existing, the Thermal Plan only requires limitations necessary to assure protection of the beneficial uses. The State Water Board, in SWRCB Order WQ 83-01, interpreted this objective to mean reasonable protection of beneficial uses so that some degradation is permissible.

If a thermal discharge to coastal waters, such as the MBPP discharge, is deemed to be a new discharge, much more stringent numeric water quality objectives apply. These include a requirement that the temperature not exceed receiving water temperature by more than 20°F and that the discharge not cause natural water temperature to rise more than 4°F at the shoreline, the ocean substrate or 1,000 feet from the discharge system. Also, the discharge must be located in the open ocean away from the shoreline and must achieve dispersion through the vertical water column.

If it is deemed a new discharge, the modernized SBPP discharge to an enclosed bay would have to comply with similar numeric water quality objectives for new discharges to enclosed bays. These water quality objectives provide:

- "(1) The maximum temperature of waste discharges shall not exceed the natural temperature of the receiving water by more than 20°F.
- "(2) Thermal waste discharges having a maximum temperature greater than 4°F above the natural temperature of the receiving water are prohibited."

These water quality objectives seem contradictory, but the terms "temperature of waste", used in subsection (1), and "thermal waste", used in subsection (2), have different meanings. "Waste" refers to all waste constituents in the discharge. (Wat. C. § 13050.) "Thermal waste" means only cooling water and industrial process water used for the purpose of transporting waste heat. (Thermal Plan p. 1.) In the case of SBPP which discharges cooling water, the controlling objective would be the prohibition of a discharge exceeding 4°F over receiving water temperature.

Neither MBPP nor SBPP, as planned for modernization, will comply with all the numeric water quality objectives for new discharges. Also, modernized MBPP will not comply with the off-shore discharge requirement. However, Duke has an opportunity to obtain a variance from these objectives. This variance is authorized by Clean Water Act section 316(a) and is incorporated in the Thermal Plan as follows:

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"Regional Boards may, in accordance with Section 316(a) [of the Clean Water Act] . . . grant an exception to Specific Water Quality Objectives in this Plan. Prior to becoming effective, such exception and alternative less stringent requirements must receive the concurrence of the State Board."

The variance may be granted under Clean Water Act section 316(a) if the Board finds that state water quality standards are more stringent than necessary to protect a balanced, indigenous, community of fish, shellfish and wildlife in and on the receiving water body. This is referred to as the BIC standard. In determining whether a BIC is being protected, the Board must consider all pollutants and other impacts affecting the BIC. (40 C.F.R. § 125.73.) It is possible that even in cases where the thermal discharge has no adverse effect on aquatic life, the Board might not be able to support a BIC determination because aquatic life was degraded by some other mechanism, such as larval entrainment by the intake system, turbidity, or low dissolved oxygen. Therefore, it is possible that a variance might not be available to Duke, either because of harm to aquatic habitat caused by the heat discharge, the cooling water intake system or other pollutant sources. Additional scientific study would be needed before such determination could be made.

Definitions of Existing and New Discharges: Regardless of the consequences, the question of whether the thermal discharges from the modernized plants are regulated as new or existing discharges must be based on the language in the Thermal Plan. A review of this language indicates that the discharges from the modernized MBPP or SBPP would be considered existing discharges as long as there has not been a material change in the existing discharge.<sup>1</sup>

The Thermal Plan defines an existing discharge as:

"Any discharge (a) which is presently taking place,<sup>2</sup> or (b) for which waste discharge requirements have been established and construction commenced prior to adoption of this plan, or (c) any material change in an existing discharge for

<sup>1</sup> This conclusion supersedes the conclusion on the same issue in the Office of Chief Counsel memo dated March 24, 1999, addressed to David Mazul of the California Energy Commission, page 7. That opinion was based upon certain incorrect assumptions of fact. First it incorrectly assumed there would be a material change in discharges when old plants are modernized due to increased heat and increased number of discharge hours per day or year. That is not necessarily the case. Second, the opinion assumes that if an old plant is replaced by a new plant, the discharge is not existing. However, as discussed below, the focus of the Thermal Plan language is not on the facility causing the discharge but on the discharge itself. Finally, the Thermal Plan policies relied on in the memo were based only on staff speculation. Division of Water Quality staff have found only a limited administrative record for the Thermal Plan and no documentation in the record regarding the policy behind this Thermal Plan provision. In contrast, due to the energy crisis, Governor Davis has established the policy requiring the SWRCB to ensure that power plants are not precluded from operating as a result of thermal limits.

<sup>2</sup> "Presently" is not defined but it is reasonable to interpret it to refer to the time of Thermal Plan adoption, January 7, 1971 as this provision was in the original version of the Thermal Plan. This date will be referred to simply as 1971.

which construction has commenced prior to adoption of this plan." (Thermal Plan p. 2.)

The plan specifies that SBPP is an existing discharge. (Thermal Plan p. 2.) While not specified in the Thermal Plan, MBPP was constructed before the Thermal Plan was adopted in 1971 and has been deemed an existing discharge under its NPDES permit.

The Thermal Plan defines a new discharge as a discharge that "is not presently taking place unless waste discharge requirements have been established and construction has commenced" prior to plan adoption or "which is presently taking place and for which a material change is proposed but no construction has commenced."

There is no question that the pre-modernization discharges from MBPP and SBPP are existing discharges. To determine whether the post-modernization discharges are existing or new discharges one must consider the definition of new discharges, which says nothing about changes in the facility generating the discharge. If the MBPP or SBPP plants were merely to be repaired or updated, there would be no question that the discharges would still be existing discharges. There is nothing in the definition suggesting that replacement of the old power plants with more efficient new plants, makes the discharges new. Instead the definition focuses on the discharge itself and so the determination must be based on the discharge. At MBPP and SBPP, the same discharge systems will be used to discharge the same type of waste from the same type of facility (gas powered electrical generating plant). The discharges are essentially the same, regardless of changes in the facility generating the discharge. Thus, unless materially changed, the post-modernization discharge is the same discharge that existed before modernization.

This interpretation is reinforced by the contrast between Thermal Plan language and related federal regulations defining a "new source" or "new discharger". (40 C.F.R. § 122.2.) These federal regulations provide, in pertinent part, that when an older facility is completely replaced, the new facility becomes a "new source" or a "new discharger" and it loses its exemption from federal technology based effluent limitations that were adopted after the original facility was constructed. The permit for the replacement facility also loses its exemption from NEPA and CEQA. (40 C.F.R. § 122.29; Wat. C. § 13389.)<sup>3</sup> The fact that federal law focuses on the facility, and the state Thermal Plan focuses on the discharge, without mentioning the status of the facility, indicates that under the Thermal Plan, facility replacement is not relevant to determination of new and existing discharges. If the SWRCB had intended facility replacement to be a consideration, it would have said so, just as the federal regulation drafters did.

<sup>3</sup> In the case of MBPP and SBPP Duke concedes that the modernized plants are replacements and will be new sources, subject to more stringent regulation under the Clean Water Act and CEQA.

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While facility replacement is not to be considered in determining whether the discharges are new or existing, it is essential that there not be a material change in the discharge after modernization. The concept of material change is found in the Porter-Cologne Act and clarifying regulations.<sup>4</sup>

Water Code section 13260(c) mandates that every discharger must file a report of waste discharge for any material change or proposed change in the "character, location or volume of the discharge." SWRCB regulations define a material change as follows:

"A material change in the character, location, or volume of the discharge requiring a waste discharge report includes, but is not limited to, the following:

- (a) Addition of a major industrial waste discharge to a discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the waste.
- (b) Significant change in disposal method, e.g., change from a land disposal to a direct discharge to water, or change in the method of treatment which would significantly alter the characteristics of the waste.
- (c) Significant change in the disposal area, e.g., moving the discharge to another drainage area, to a different water body, or to a disposal area significantly removed from the original area potentially causing different water quality or nuisance problems.
- (d) Increase in flow beyond that specified in the waste discharge requirements.
- (e) Increase in area or depth to be used for solid waste disposal beyond that specified in the waste discharge requirements."  
(Cal. Code Regs., tit. 23, § 2210.)

Duke asserts there will be no material change in the discharges after modernization because the character, location and volume of discharge will not change. There is no dispute the discharge locations will not change. The volume discharged will not be increased but may be reduced. A volume reduction is not a material change because the regulation indicates that a change in volume is material only if it is beyond the volume specified in waste discharge requirements. Duke also asserts that there will be no change in character of the discharge because the modernized plants will be using essentially the same industrial process and because of improved efficiency, that process will reduce heat, the major pollutant in the discharge.

<sup>4</sup> The Porter-Cologne provision was in place prior to the 1971 adoption of the Thermal Plan. (Stats. 1969 c.482, § 18.) The regulatory provisions were in place prior to adoption of the most recent version of the Thermal Plan in 1975. (SWRCB Res. 75-89.)

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Whether these assertions by Duke are accurate or not is beyond the scope of this memo. The determination of material change must be made by the Regional Board. The Central Coast Regional Board staff have asked what baseline to consider when determining if a material change will occur. Because Water Code section 13260 requires a report of waste discharge be filed if a material change occurs or is proposed, the comparison should be made to the previous report of waste discharge and the existing waste discharge requirements. If the character, location, and volume of the discharge are not materially different from those described in the previous report of waste discharge and permitted in the existing waste discharge requirements there is not a change.

Conclusion

Determination of whether a discharge is new or existing under the Thermal Plan depends on the character, location and volume of the discharge and not whether the facility generating the existing discharge has been repaired, upgraded or totally replaced. If there is an existing discharge, and the discharging facility is replaced, the discharge from the modernized facility will be an existing facility under the Thermal Plan, as long as there has not been a material change in the discharge. The Regional Board issuing the permit for the new facility will decide whether there will be a material change in the discharge.

cc: Jennifer Soloway, OCC

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04-04-01  
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