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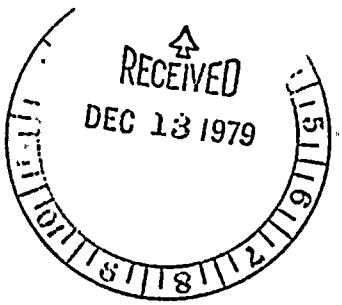
December 12, 1979

Mr. R. H. Engelken, Director
Office of Inspection and Enforcement
Region V
U. S. Nuclear Regulatory Commission
1990 N. California Boulevard
Walnut Creek Plaza, Suite 202
Walnut Creek, California 94596



Re: Docket No. 50-275-OL
Docket No. 50-323-OL
Diablo Canyon Units 1 & 2

Dear Mr. Engelken:

The attached material is submitted in response to Item 5 of IE Bulletin No. 79-13 Revision 2.

Very truly yours,

Philip A. Crane, Jr.

Attachment

CC w/attachment: Director
Office of Inspection and Enforcement
Division of Reactor Operations Inspection
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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Response to IE Bulletin 79-13, Revision 2

5a. Schedule for inspection and testing.

The program of inspection and testing for Unit 1 has been completed and no deficiencies were evident. The Unit 2 program will be completed after Hot Functional but prior to Unit 2 fuel loading.

The program includes re-radiographing all feedwater nozzle-to-pipe welds with 4.5 inch by 17 inch film. Two radiographs per weld must be taken to provide inspection of those areas masked by the number belt and penetrameter. The radiographs are taken to a 2T penetrameter sensitivity with the pipe empty. Evaluation is in accordance with ASME Section III, Subsection NC, Article NC-5000.

A visual inspection of all feedwater pipe supports and snubbers inside Containment is performed to verify operability and conformance to design in the cold condition.

5b. Adequacy of operating and emergency procedures to recognize and respond to a feedwater line break accident.

The adequacy of the Diablo Canyon Emergency Procedure EOP-2B (Feedwater Line Break) has been reviewed. This procedure was revised and upgraded in July 1979 and provides adequate instructions to the operating personnel for recognition and response of a feedwater line break. However, EOP-2B is again being reviewed and incorporated into the Loss of Secondary Coolant Emergency Procedure to comply with the Westinghouse Owners Group Procedures Committee's Guidelines for Emergency Procedures.

5c. The following methods are available for detecting feedwater leaks inside containment:

1) Containment Humidity Detectors and Condensate Measurements. The humidity monitors provide an indication of overall leakage from all steam and water systems within the containment. They are located at various points in the containment.

The containment condensation measuring system also determines leakage from all water and steam systems within the containment, including the Feedwater System and provides a measure of the amount of leakage vaporized. This system collects and measures moisture condensed from the containment atmosphere by the cooling coils of the fan cooler air circulation units. It relies on the principle that moisture from leaks up to sizes permissible for continued plant operation will evaporate into the containment atmosphere and will be condensed on the fan cooling coils. This system provides a dependable and accurate means of measuring total integrated leakage, including leakage from the cooling coils themselves, by measurement of the flow rate of liquid runoff from the drain pans under each containment fan cooler unit. The condensate measuring system consists of a vertical standpipe, valves, and instrumentation installed in the drain piping of the reactor containment fan cooler unit.

Depending on the number of reactor containment fan cooler units in operation, the drainage flow rate from each unit due to normal condensation is determined. With the initiation of an additional or abnormal leak, the containment humidity and condensation runoff rate will both begin to increase, and the additional leakage can be accurately measured.

The humidity detection instrument has the characteristics of being sensitive to vapor originating from all sources within the containment, including leakage from the steam and feedwater systems. The sensitivity of this method depends on cooling water temperature, containment air temperature variation and containment air recirculation rate, and the ability to measure these variables.

Within the containment, the air and internal structure temperatures are normally held at 120°F or less. The hot dry air promotes complete evaporation of water leakage from hot systems, and the cooling coils of the fan cooler units provide the only significant surfaces at or below the dewpoint temperature. Therefore, under equilibrium conditions, the quantity of condensate collected by the cooling coils of the fan cooler units should be equal to the leakage of water and steam from systems within the containment.

In order to determine abnormal leakage rate inside the containment based on condensation measurements, it will first be necessary to determine the condensation rate from the fan coolers during normal operation. With the initiation of an additional or abnormal leak, the containment atmosphere humidity will begin to increase. The containment specific humidity will increase in proportion to time and extent of leakage until the wet bulb temperature of the air-vapor mixture is equal to cooling water temperature at the exit from the fan cooler. Further increase in humidity is prevented by additional condensation on the fan cooler tubes, assuming that there is no large heat addition to the containment that could cause the cooling water temperature to increase.

With the increasing specific and relative humidity, the heat removal capacity needed to cool the air-vapor mixture to its dewpoint decreases. Therefore, increases in available heat removal capacity (i.e., increases in the number of fans in operation) will result in added condensate flow. Through accurate measurement of condensate flow from the fan coolers a reliable estimate of leakage inside the containment can be made.

A preliminary estimate of the leakage can be obtained from the condensate flow increase rate during the transient; a better estimate can be determined from the steady state condensate flow when equilibrium has been reached. The measurement of condensation can be performed with sufficient accuracy to establish compliance with operating limits. After equilibrium is attained, condensate flow from approximately 0.1 gpm to 30 gpm per detector can be measured by this system.

2) Containment Sump Levels and Pump Operation. Since leakage inside containment would result in feedwater flowing into one of the containment sumps, sump level and pump integrated flow can be monitored to provide a measure of the overall leakage. The level monitors can detect changes of less than one inch and could detect a 1 gpm leak in less than 25 minutes. Monitoring of sump pump operation could take up to 8 hours to detect a 1 gpm leak.