

U. S. ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION V

Report of Inspection

CO Report No. 50-275/69-2

Licensee: Pacific Gas & Electric Company
Construction Permit No. CPPR-39
Category A

Date of Inspection: March 11, 1969

Date of Previous Inspection: February 7, 1969

Inspected by:

A. D. Johnson 2/21/69
A. D. Johnson
Reactor Inspector

Reviewed by:

G. S. Spencer 3/2/69
G. S. Spencer
Senior Reactor Inspector

Proprietary Information: None

SCOPE

Type of Facility: Pressurized Water Reactor

Power Level: 3250 Mwt

Location: Diablo Canyon near
San Luis Obispo, California

Type of Inspection: Routine - Announced

Accompanying Personnel: J. L. Crews, Reactor Inspector and
G. S. Spencer, Senior Reactor Inspector

Scope of Inspection: The inspection was conducted to
provide an opportunity for the inspectors to become acquainted with Pacific
Gas & Electric Company's (PG&E) current onsite organization and personnel
and to permit direct observations of the status of construction activities.

SUMMARY

The applicant has submitted bid specifications to a list of selected firms for the construction of the containment building. Of interest was the requirement imposed on the prospective contractors concerning visits to other nuclear plants currently under construction. Also, special training on concrete production and placement is planned for onsite inspectors.

Based on information obtained from the applicant's onsite personnel, the plant site is expected to be ready for the selected contractor to begin work on the containment structure on June 1, 1969. Concrete placement is scheduled to commence about June 15, 1969.

The onsite meteorological data collection systems were verified to be consistent with the descriptions provided in the preliminary safety analysis report.

DETAILS

A. Persons Contacted

John W. Woodward - Asst. Construction Supt., Civil Structures
Robert V. Farley - Resident Engineer
Harvey Peterson - Field Engineer
Dave Maxwell - Soils Engineer

B. On-Site Personnel

Mr. Farley stated that approximately 25 PG&E employees are currently at the site. He added that they were primarily civil engineers, inspectors, surveyors and clerical. At the present, Mr. Farley is the Resident Engineer-in-Charge. Farley stated that PG&E's onsite administrative organization would be enlarged as the need requires.

C. Status of Construction

The following information concerning the construction status of the project was obtained by direct observation and discussions with Messrs. Woodward and Farley.

1. Farley estimated that approximately 300,000 cubic yards of overburden soil and bedrock were still to be removed from the reactor site area. The excavation remaining to be completed consisted of (1) lowering a hillside section of the area an additional 20 to 30 feet, and (2) excavating below grade level for the containment structure.

2. The sandstone bedrock material being removed from the reactor site area (base of hill) was being used as fill material for the 250 kv switchyard in Diablo Canyon. The excavated adobe material was being deposited in the area where the 500 kv switchyard will be located (see PSAR Figure 2-3; site plan for relative locations of plant and switchyards).
3. PG&E field inspectors were observed at the fill area. Farley explained that the inspectors were responsible to verify that the contractor was installing the fill material in accordance with the contract specifications.
4. Mr. Farley showed the inspectors the applicant's field laboratory used for testing soils. The laboratory was housed in a trailer equipped with the necessary tools to enable the performance of standard soil tests. Mr. D. Maxwell, Soils Engineer, stated that currently, moisture and compaction tests were being performed on the switchyard fill areas to assure that the fills (when completed) will comply with the specifications.
5. The contract covering the excavation work at the plant site calls for completion of this work by June 1, 1969. Farley stated that the schedule is "tight", but believed that the contractor would complete the work within the specified time, barring, of course, unforeseen delays, principal among which might be weather conditions.

D. Containment

Construction Schedule - Prospective Contractor

Mr. Woodward stated that the specifications for the construction of the containment structure were sent to selected construction firms on March 10, 1969, with bids to be submitted by May 15, 1969, and work to commence on June 1, 1969. According to Woodward, one of the requirements imposed upon prospective bidders was that, prior to submitting a bid on the project, responsible personnel of the firm visit one or more nuclear plants under construction, to assure that they were well aware of the complexities and the stringent requirements involved in this type of contract. Woodward identified, some of the prospective bidders as follows:

Guy F. Atkinson
Morrison-Knudsen
Wright
Peter Kiewit Sons
Gordon Ball
Bechtel Corporation

Concerning the containment steel liner, Woodward stated that the opportunity to bid was limited to the following three firms:

Chicago Bridge and Iron
Pittsburgh Des Moines Steel
Graver Tank and Manufacturing Company

According to Mr. Woodward, PG&E is to purchase a fully automatic concrete batch plant for the project. However, it will be operated by the selected contractor. The plant is to include digital recording equipment for individual batch ingredients. The batch plant and weighmaster are to be certified by the State of California and/or County of San Luis Obispo.

The inspectors briefly reviewed the contract specifications for concrete. The specifications described a program for the tensile testing of Cadweld splices in the concrete reinforcing steel. The program includes the testing of a combination of sister and production splices for each splicing crew, splice position (horizontal or vertical) and reinforcing steel grade according to the following schedule:

One out of the first 10 splices
Three out of the first 100 splices
Two out of each subsequent 100 splices

Twenty-five percent of the total splices tested according to the above schedule are to be production splices and the balance are to be sister splices.

The specifications require a 100% visual inspection of finished Cadweld splices, and state that "Sound, non-porous filler metal must be visible at both ends of the splice sleeve and at the tap hole."

Two requirements of the specifications were the subjects of particular discussion between the inspectors and Mr. Woodward. The first related to the tensile testing schedule for Cadweld splices, specifically the statement "three out of the first 100 splices". Mr. Woodward stated that the requirement seemed to contain a typographical error, and probably should be corrected to read "three out of the next 100 splices".

The second area related to the requirements which must be satisfied by the visual inspections of Cadweld splices. The inspectors asked if, in addition to the requirement that filler metal be visible at both ends of the splice sleeve, there was to be a limitation applied to the maximum void area detected by visual inspection?

Mr. Woodward stated that consideration would be given to both inquiries by the inspectors.

The tensile testing program described above calls for a lesser number of splices to be tested than are suggested in "Reactor Technology Memorandum - Reinforcing Bar Cadweld Splices", dated October 29, 1968. This point was not discussed with Mr. Woodward or other persons contacted, however.

Woodward also pointed out that the applicant intends to do much of the concrete testing to assure that the contractor produces concrete of proper quality. He added that the quality control inspectors will be trained by the Company's Engineering Department prior to the actual start of concrete placement. The training according to Woodward, will also include seminars given by representatives of the cement vendor and will emphasize proper procedures for production, testing and placement of the concrete.

E. Meteorological Data

Mr. Peterson, Field Engineer, directed the inspectors' attention to the locations of six on-site meteorological data collection systems. The identified systems were verified to be consistent with the proposed systems described in Section 2.3.4. of the Preliminary Safety Analysis Report. Mr. Peterson stated that the recording instrumentation at the station on Diablo Creek had been out of service for a few weeks because the instruments had been damaged by water during the recent heavy rains. He added that the stations are checked on a daily basis (5 days/week) to assure continued operation of the data recording equipment.