



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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~~NRC PDR~~

November 13, 1978

Docket Nos. STN 50-592
and STN 50-593

MEMORANDUM FOR: L. G. Hulman, Chief
Hydrology-Meteorology Branch, DSE

FROM: R. O. Gonzales, Hydraulic Engineer
Hydrology-Meteorology Branch, DSE

THRU: W. S. Bivins, Leader *WSB 11/6*
Hydrologic Engineering Section, HMB, DSE

SUBJECT: MEETING AND SITE VISIT - PALO VERDE NUCLEAR
GENERATING STATION

On October 17-18, 1978 the undersigned and W. S. Bivins visited the Palo Verde Nuclear Generating Station which is located about 36 miles west of Phoenix, Arizona. The purpose of the trip was to meet with the applicant, Arizona Public Service Company (APSC) and its consultants to discuss the application for a construction permit to construct two additional units; and to visually inspect the site. Although the meeting was mainly for gathering and exchanging information between NRC and the APSC, the general public was given the opportunity to attend and be involved in the proceedings. Public attendance was very disappointing; only four persons identified themselves as not representing APSC, its consultants or NRC. Only one of these persons verbally expressed concerns about the project.

We questioned the applicant about three items: flooding, groundwater levels and a post-CP item from Units 1, 2 and 3 concerning an ongoing seepage study. The applicant provided answers for the first two items and advised us that the seepage study for Units 1, 2 and 3 will not be completed until the end of the calendar year; at which time it will be submitted to NRC for review. The seepage analyses for Units 4 and 5 will be based on the results of this seepage study. At the present time, SER input for Units 4 and 5 is due by January 9, 1979. The applicant's late completion of its study will necessarily impact on this schedule in that the seepage question will have to an unresolved issue in the SER input for Units 4 and 5. Because of this, the applicant will try to hurry-up the study. However, no firm (earlier) date could be identified by the applicant.

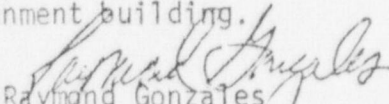
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During the site visit, we made a visual inspection of the area where units 4 and 5 will be located. We were advised that 225 borings ranging in depth from 29 feet to 400 feet have been drilled for units 4 and 5. There wasn't any activity at the unit 4 site but at site No. 5, instruments were being installed in several wells to conduct pumping tests. Next came an inspection of construction activities at units 1, 2 and 3. Unit 3 is about 30 percent complete and ready to accept the reactor vessel, which was due to arrive at the site that week; unit 2 is about 8 percent complete and unit 1 is just a hole in the ground.

We then investigated a diversion which has been constructed between two small hills at the northeast corner of the site. This structure intercepts flood flows from East Wash and rechannels them along the east boundary of the site away from the plant. It appears that the diversion has already been effective in diverting water away from the site as evidenced by sediment deposition and a slight displacement of some of the channel riprap. There is a newly constructed hard surface road that runs normal to the East Wash diversion. Three corrugated metal culverts have been installed under this roadway to pass East Wash flows. During a severe flood, such as the Probable Maximum Flood, it is possible that these culverts could become clogged with sediment, rocks and debris causing water to pond behind the road embankment eventually flowing over the road or causing a wash out. This issue is now being pursued with the applicant.

We then inspected the excavation for the make-up water storage pond for units 1, 2 and 3. During review of the PSAR for units 1, 2 and 3, the applicant was advised that prior to constructing this storage reservoir the seepage study was to be completed and an effective solution for controlling seepage had to be proposed by the applicant and approved by NRC. As mentioned previously, the seepage study will not be completed until the end of the year. When reminded of this, the applicant responded that the reservoir area had been the source of borrow material for the construction site. About 2,800,000 cubic yards had been used as material for the East Wash embankment and other construction fill had been obtained from the area. Further, several more feet of material have to be removed before the storage reservoir will be the required size. Thus, the applicant concluded that construction had not begun on the reservoir; material had just been borrowed from the area.

The rest of the day was spent looking at the physical plant layout. We noted that a 600 ton crane is at the site ready to lift and place the reactor vessel into the containment building.


Raymond Gonzales
Hydraulic Engineer, HES
Hydrology-Meteorology Branch, DSE

cc: See attached list

L. G. Hulman

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cc: R. Denise
W. Bivins
R. DeYoung
D. Muller
R. B...
B. Str... t
R. Gonzales
NRC PDR
Local PDR
ACRS (18)