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SUBJECT: Forwards response to NRC 811124 draft safety evaluation for SEP Topic IX-1, fuel storage. Evaluation should be revised to address new fuel storage or basis for deleting such reivew.

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December 23, 1981

Director of Nuclear Reactor Regulation
Attention: Mr. Dennis M. Crutchfield, Chief
Operating Reactors Branch No. 5
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: SEP Topic IX-1, Fuel Storage
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Crutchfield:

This letter is in response to the draft Safety Evaluation for SEP Topic IX-1, which was transmitted by your letter dated November 24, 1981. The evaluation concluded that the spent fuel pool cooling systems and the spent fuel storage racks were acceptable when compared to current criteria. The evaluation also concluded that the spent fuel pool was acceptable when compared to current criteria on the basis that SEP Topic III-6, Seismic Design Considerations, had reached an overall conclusion that the plant structures were adequate.

The spent fuel pool structural capability was reviewed by the NRC Staff in conjunction with spent fuel pool modifications and was approved in Amendment 11 to the Ginna license issued November 15, 1976. We suggest that this reference be added to support the Staff's conclusions regarding the Ginna spent fuel pool.

The topic definition for SEP Topic IX-1, issued by letter from Darrell G. Eisenhut dated March 7, 1978, indicates that both new and spent fuel storage facilities are to be reviewed. Since your evaluation does not address new fuel storage, we suggest that the draft Safety Evaluation be revised to address new fuel storage or that the basis for deleting a review of new fuel storage facilities be identified. RG&E submitted an informal response on July 5, 1979 to a set of questions telecopied to RG&E on June 6, 1979. This correspondence is being provided as an attachment to this letter.

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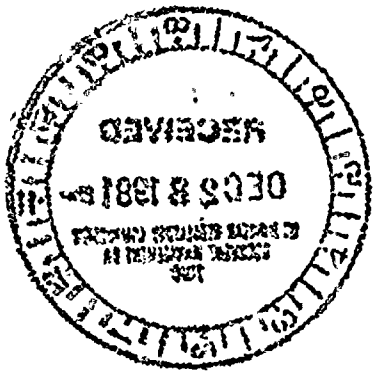
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The assessment for topic IX-3, Station Service and Cooling Water Systems, stated in the conclusion that "If the findings of Topic IX-1 necessitate any additional review of the Service Water System, it will be addressed in the integrated assessment for the facility." Since no such findings were made during the review of IX-1, this assessment should include a statement concluding that no additional review of the Service Water System with regard to the interface with the Spent Fuel Pool Cooling System is required. This statement can then be used to appropriately modify Section VII of Topic IX-3.

Very truly yours,

John E. Maier

Attachment

ATTACHMENT 7/5/79

SEP Topic XI-1, "Fuel Storage"

1. How is the K_{eff} verified? How often is it verified?

   Response 1. The design of the new fuel storage facility is identical to the original design of the spent fuel storage racks - center-to-center spacing of 21 inches, provided to maintain K_{eff} <0.90, even if the storage facility were filled with unborated water. This information is provided in Section 9.5 of the FSAR (see 9.5.1 and Table 9.5-1).

   Since new fuel is stored dry, K_{eff} is much less than 0.90. Note that this arrangement meets substantially more conservative criteria for sub-criticality than those required by the SRP 9.1.1, i.e., $K_{eff} \leq 0.95$. For these reasons, K_{eff} does not need to be verified in the new fuel storage area.

2. What features can be used to detect a criticality in the new fuel storage area? Are there alarms associated with these features?

   Response 2. Because of the inherently safe design ensuring sub-criticality even if the new fuel storage area were filled with unborated water, there are no features provided specifically to detect criticality in the new fuel storage area. There is an area radiation monitor above the spent fuel pool, located about 25 feet from the new fuel storage area. There is an area

radiation monitor above the spent fuel pool, located about 25 feet from the new fuel storage area. The purpose of this monitor is to detect abnormalities in the spent fuel area during refueling. This detector would activate an alarm in the control room at 25 mr/hr. This monitor would thus detect criticality in the new fuel storage area, even though this function is not its intended purpose. We note in passing that SRP9.1.1 makes no mention of criticality measurements, monitors, etc. in the new fuel storage area.

3. What features prevent flooding of the new fuel storage racks?

Response 3: As noted in response to question 1 above, the new fuel would remain subcritical ($K_{eff} < 0.90$) even when flooded with unborated water. There is thus no pressing need to protect this facility from flooding.

However, the chance of flooding the new fuel assemblies is very low. There are very few fluid lines in the vicinity of the new fuel area. These are small, low energy, building steam heating and condensate return lines, and some liquid waste lines. These are located above, but to the side, of the new fuel storage area. The top of the new fuel storage area is covered by locked steel plates. Any water above the new fuel area could at most slowly drip into the area. There is a drain to accommodate any such leakage in the new fuel enclosure. Also, the floor is slightly

sloped to one side, where there is a locked door (with some small clearance from the floor). Outside the locked door is another floor drain.

Another consideration minimizing the possibility of flooding is the fact that the new fuel storage area is located on the operating floor of the auxiliary building. Any external flooding would have to fill the two complete lower floors before threatening the new fuel storage area. Furthermore, the new fuel assemblies are stored about a foot above the auxiliary building floor.

Another administrative precaution is the practice of opening a hole in the bottom of the protective plastic bags in which the new fuel assemblies are transported. This will ensure that water could not accumulate within the bags.