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SUBJECT: Submits addl info re potential effects of flood levels from
 Deer Creek in excess of std project flood, per SEP Topic
 II-3.B. Additional cost of mod to meet PMF unwarranted.

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May 20, 1983

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 II-3.B, Deer Creek Flooding
R. E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Crutchfield:

RG&E has made a further evaluation of the potential effects of flood levels from Deer Creek in excess of the Standard Project Flood (SPF). This evaluation is based on the additional flood protection to be afforded the Ginna plant by virtue of proposed structural modifications to be implemented by RG&E's "Structural Reanalysis Program", as described in our April 22, 1983 letter on SEP Topics II-2.A, III-2, III-4.A, and III-7.B.

Prior to detailing this evaluation, RG&E emphasizes that the Probable Maximum Flood (PMF) level being used to compare against current protection levels is that calculated by our Contractor and described in our August 18, 1981 submittal. This PMF of 32,500 cfs is based on current Standard Review Plan techniques, as it is tailored specifically for the Ginna site. The NRC's PMF of 38,700 cfs was derived by applying conservative factors to parameters such as antecedent moisture content and Manning's coefficient, in addition to making the extremely conservative assumption of the occurrence of the PMF itself. RG&E does not consider this compounding of conservatisms warranted.

Using the results of the "Ginna Station Deer Creek Overflow Flooding Study", submitted by letter of January 31, 1983, the PMF is calculated to result in a flood height of approximately 274.8 feet msl on the south and west sides of the upper portion of the plant (west channel flow), a height of approximately 272.0 feet msl on the east and north sides of the upper portions of the plant (east channel flow), and a flood height of approximately 260.3 feet msl at the lower portions of the plant.

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DATE May 20, 1983

TO Mr. Dennis M. Crutchfield

Several modifications are presently planned as part of the Structural Reanalysis Program which will affect the flood resistance of Ginna. These include the installation of tornado missile protection for a diesel generator room and the relay room, as well as the completion of procedures and hardware modifications to provide cooling water to the diesel generators and steam generators if the service water system is not available. Based on these anticipated modifications, RG&E has reconsidered the flood protection that will be available at Ginna, and the cost associated with protection to higher levels.

At the upper level of the plant (south and west side), the limiting components are the exterior block walls, and one access door. With minor modifications, the walls and door will be acceptable to a height of 273.8'. This corresponds to a Deer Creek flow rate of $\sim 26,000$ cfs, or 80% of the PMF. For this flow, a water seal would also have to be installed over the three-inch "rattle space" between the containment and the auxiliary building walls. At the upper level of the plant (east and north sides), the block walls are acceptable as installed because of the lower PMF water level. However, water could leak underneath three doors into the auxiliary building, two conventional access doors and a roll-up service door. RG&E intends to install a one-and-a-half foot curb in front of the access doors or to provide portable one-and-a-half foot high dam sections for these doors. A permanent curb would not be practical for the roll-up door, however, since it is intended for vehicular use. RG&E thus plans to provide portable one-and-a-half foot high dam sections, and a procedure for their installation in the event of an impending flood. Since there are only two prompt flood protection actions required (this dam installation, and connection of the alternate cooling water supply to the diesel generator) in the event of a severe overflow of Deer Creek, RG&E believes that the available warning time of approximately three hours from the time the bridge over Deer Creek is overtopped is sufficient.

At the lower section of the plant, an evaluation of the "superwall" and doors in front of the diesel generator rooms and the battery rooms has been made. The limiting item of this group is the diesel generator door, which can withstand approximately 9.5 feet of hydrostatic head. There is also an opening between the intermediate building and the cable tunnel. This opening is 8.5 feet above grade, at elevation 262.0'. Since both of these levels are higher than the PMF level of 260.3', no need for modifications is being considered.

[illegible]

DATE May 20, 1983

TO Mr. Dennis M. Crutchfield

In order to meet the PMF, the major component requiring additional upgrading would be the block walls on the south side of the plant. It is estimated that for a flood height greater than 274.0 ft msl, the walls would have to be replaced with concrete. The PMF is calculated to result in a height of 274.8'. An alternative would be to dredge the Deer Creek channel. This would require the movement of approximately 70,000 yd³, plus replacement of the bridge. In either case, the additional modification cost is estimated to be in excess of \$2 million.

In summary, with the modifications contemplated as a result of the Structural Reanalysis Program, and some additional minor procedural and hardware modifications described in this letter, the R. E. Ginna Nuclear Power Plant will be able to withstand a Deer Creek flood flow of 26,000 cfs, and thus will have substantial margin above the Standard Project Flood. As previously noted in our August 18, 1981 submittal, RG&E considers the Standard Project Flood to be very conservative, with a recurrence interval on the order of tens of thousands of years, and thus should be retained as the "Design Basis Flood" for the plant. However, because of the program presently being planned by RG&E to modify certain structures at Ginna, and the small number of changes required to increase the margins of safety, RG&E believes that the hardware and procedural changes described in this letter to meet a 26,000 cfs Deer Creek flow would be reasonably cost effective. The substantial additional cost to meet the PMF, however, is not considered warranted.

Very truly yours,

John E. Maier
John E. Maier

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