



Nebraska Public Power District

GENERAL OFFICE
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May 24, 1985

Director Of Nuclear Reactor Regulation
Attention: Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch No. 2
Division Of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Vassallo:

Subject: NUREG-0737, Supplement 1 - Regulatory Guide 1.97

Reference: 1) Letter from D. B. Vassallo to J. M. Pilant dated March 11, 1985, "Emergency Response Capability - Conformance to Regulatory Guide 1.97, Revision 2"

Reference 1 discussed the results of the review conducted by Idaho National Engineering Laboratory (INEL) on the District's Regulatory Guide (R.G.) 1.97 submittals dated March 1, 1984 and April 6, 1984. The review identified six items in which adequate justification for exception to R.G. 1.97 was not provided and requested District response to these items.

With the exception of coolant level in the Reactor, the District's response to these items is attached. Integration of all NUREG-0737, Supplement 1 items, requires an additional analysis in order to respond to the item of coolant level in the Reactor. This study is necessary to allow for adequate integration of SPDS concerns, previous R.G. 1.97 submittals, and resolution of improvements to the Plant that will reduce level indication errors caused by high drywell temperature as identified in Generic Letter 84-23. The District expects this response to be finalized by September 1, 1985.

The District is also submitting additional information on Drywell Sump Level, Drywell Drains Sump Level, and Containment and Drywell Oxygen Concentration Instrumentation to ensure no misinterpretation was made by INEL on the earlier submittals.

Sincerely,

J. M. Pilant
Technical Staff Manager
Nuclear Power Group

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Item 1 - Neutron Flux

Comment

INEL indicated that the deviation in range was unacceptable. They also indicated that the existing neutron flux instrumentation is acceptable for interim operation and that the District should follow the development of Category 1 equipment, evaluate newly developed equipment, and install Category 1 instrumentation when it becomes available.

Response

In the District's March 6, 1985, submittal the instrumentation range was corrected to the lower limit of 10^{-8} percent.

The District will use the existing neutron flux instrumentation in the interim since Category IE equipment is not available. The District will follow industry development of Category 1 neutron flux instrumentation, evaluate newly developed equipment and install Category 1 instrumentation upon the demonstration of reliable, functional and maintainable equipment.

Item 2 - Drywell Sump Level & Drywell Drains Sump Level

Comment

INEL found that Category 3 instrumentation is acceptable for Drywell Sump Level and Drywell Drains Sump Level.

Response

The District proposes the following Category 3 instrumentation to meet the intent of Regulatory Guide 1.97 for drywell equipment and floor drain sump level:

A set of three annunciator alarms; High Level, High-High Level, and Fill-Up Rate High. High Level alarm indicates the water reached the level of automatic pump initiation. High-High Level alarm indicates a further rise in water level due to excessive leakage and/or pump failure. Fill-Up Rate High alarms if the time to fill the sump from the low level pump shut-off point to the high level pump start point (367 gallons) is less than 55 minutes, this indicates that the sumps are filling at an excessive rate. It is the District's position that the above combination of annunciators provide adequate indication of drywell equipment and drain sump level.

Item 3 - Containment and Drywell Hydrogen Concentration

Comment

INEL indicated that the District should identify any specific deviations taken from Regulatory Guide 1.97 requirements for Containment and Drywell Hydrogen Concentration and justify those deviations.

Response

The District's March 6, 1985, Regulatory Guide 1.97 Response, Revision 5, more clearly identifies the existing hydrogen analyzers and their status. As can be seen on that submittal, the District has two separate analyzers which provide redundancy for the range from 0 to 5 percent, although both analyzers are supplied by the same power supply. The District does not intend to implement Hydrogen Concentration as a Regulatory Guide 1.97 variable. Reference the District's 10CFR50.44 exemption request to the hydrogen recombiner rule.

Item 4 - Containment and Drywell Oxygen Concentration

Comment

INEL's review of the District's April 6, 1984, submittal concluded that the District has three separate instrumentation channels. They found that the existing instrumentation is acceptable.

Response

The District's April 6, 1984, submittal may have been misinterpreted by INEL. The District's March 6, 1985, Revision 5, submittal clearly shows that the Oxygen Analyzer is one instrument with three ranges.

Item 5 - Radiation Exposure Rate

Comment

INEL's review, requests that the District show that the existing radiation exposure rate monitors have ranges that encompass the expected radiation levels in their locations.

Response

The District's April 6, 1984, and March 6, 1985, submittals inadvertently referenced BWROG, Issue 12 instead of Issue 13 for Radiation Exposure Rate. Based upon the rationale of Issue 13, it is the District's position that the existing equipment and ranges are adequate.

Item 6 - Drywell Atmosphere Temperature

Comment

INEL indicated that the District should justify the deviation from the recommended range or respan the instrumentation to coincide with the range recommended by Regulatory Guide 1.97.

Response

As indicated in the District's March 6, 1985, Revision 5, submittal, the maximum LOCA temperature in the drywell for Cooper Nuclear Station is 340°F. This justifies the current maximum temperature range of 350°F for existing instrumentation. The lower level deviation (40°F required, 50°F existing) is of no safety significance because analyzed accidents do not result in temperatures in this range.

Item 7 - Plant and Environs Radiation

Comment

INEL indicates that the District should provide justification for the deviation in range.

Response

The upper limits of 10^3 R/hr. Gamma and 200 rads/hr. Beta is acceptable for portable instrumentation as any exposure rate higher than this would expose personnel using the instrument to doses beyond allowable limits. The District has established emergency dose exposure limits that are in excess of occupational limits established by 10CFR20. These limits, which are found in Cooper Nuclear Station's Emergency Plan Implementing Procedure, are 5 rem for sampling under accident conditions, 25 rem for corrective or protective actions and 75 rem for life-saving actions. If access is required to service equipment, the allowable limit of 25 rem would be reached in 90 seconds at the upper limit of 10^3 R/hr. of existing portable instrumentation. Any rate above 10^3 R/hr. would not allow sufficient time for corrective action, thus the area would be considered inaccessible. (Gamma exposure is considered the most limiting condition as Gamma rate will always exceed Beta rate.) Thus, it is the District's position that the existing portable instrumentation provides the needed range and meets the intent of Regulatory Guide 1.97.