

Central File

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DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

September 14, 1979

TELEPHONE: AREA 704
373-4083

Mr. James P. O'Reilly, Director
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

19 SEP 19 4 9:15
USNRC REGION II
ATLANTA, GEORGIA

Re: RII:JPO
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Dear Mr. O'Reilly:

With regard to your letter dated August 13, 1979 which transmitted IE Bulletin 79-21, please find attached our response to the action items of this Bulletin for Oconee Nuclear Station.

Very truly yours,

William O. Parker, Jr.
William O. Parker, Jr.
by JDS

RLG:scs
Attachment

cc: Director, Office of Inspection and Enforcement
Division of Reactor Operations Inspection
Washington, D. C.

ccp

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September 10, 1979

W O Parker
Vice President, Steam Production

Subject: Unsatisfactory Oconee Nuclear Station Record Storage
Departmental Audit 0-78-4, Item 7; Audit 0-79-2, Item 2A(1)
Our Letter of July 9, 1979

Various areas of noncompliance toward the Record Storage requirements of ANSI N45.2.9, have been noted within the Oconee Master File Room. These deficiencies were forwarded to you via Departmental Audit 0-78-4, dated June 14, 1978, Audit 0-79-2, dated March 13, 1979, and our letter of July 9, 1979.

As of this date, I have not been advised of what action the Steam Production Department proposes in order to resolve these deficiencies.

In that these findings have been outstanding for some time, it is requested that your response, indicating corrective action and proposed dates of implementation, be received as soon as possible. Failure to provide prompt corrective action for these deficiencies may necessitate additional action by the Quality Assurance Department in order to resolve these concerns.


J R Wells
Corporate Quality Assurance Manager

/sw

cc: 0-78-4 File
0-79-2 File

TABLE 2

Correction to indicated water level for post-accident temperature effects on the steam generator start-up level.

| <u>Reference leg temperature (°F)</u> | <u>Correction to indicated level (%) of full span</u> |
|---|---|
| 100 | 2.0 |
| 150 | 3.0 |
| 200 | 5.0 |
| 250 | 8.5 |
| 300 | 12.0 |
| 350 | 16.5 |
| 400 | 21.0 |

Note: The increase in reference leg temperature causes the measured level to indicate higher than actual level.

DUKE POWER COMPANY
OCONEE NUCLEAR STATION

Response to IE Bulletin 79-21

Item 1

Review the liquid level measuring systems within containment to determine if the signals are used to initiate safety actions or are used to provide post-accident monitoring information. Provide a description of systems that are so employed; a description of the type of reference leg shall be included, i.e., open column or sealed reference leg.

Response

The liquid level measuring systems for the steam generator, pressurizer, and core flood tank have been reviewed. These measuring systems are of the delta pressure, open column, uninsulated reference leg type. None of the level signals generated are used to initiate safety actions. These level signals are not required for post-accident monitoring due to installed instrumentation available to monitor system temperatures and/or pressures.

Item 2

On those systems described in Item 1 above, evaluate the effect of post-accident ambient temperatures on the indicated water level to determine any change in indicated level relative to actual water level. This evaluation must include other sources of error including the effects of varying fluid pressure and flashing of reference leg to steam on the water level measurements. The results of this evaluation should be presented in a tabular form similar to Tables 1 and 2 of Enclosure 1.

Response

The affect of the reference leg temperature on the level measurement instrumentation systems identified above is listed in Tables 1 and 2. The errors listed have been maximized to account for varying fluid pressures.

Consideration has been given to boiling in the reference leg and the ejection of water from the reference leg due to the effervescence of soluble gases. These effects will be discussed for each component employing a water reference leg.

For the core flood tanks using a water reference leg, the level indication would be affected by elevated temperature, but the safety function of the tank is not affected by level indication and tank discharge can be readily confirmed by pressure indication alone.

Steam generator level measurements are not significantly affected by the effervescence of soluble gases because there is insufficient soluble gas in the secondary system. For boiling to occur in the steam generator reference leg, the reference

leg must experience high temperatures and almost complete depressurization. The repressurization of the steam generator will refill the reference leg and the errors would be no greater than those listed in the tables.

The pressurizer level could be affected by the effervescence of soluble gases. The ejection of water from a reference leg has been documented in BW-4689 and previously discussed with the NRC. A depressurization from 2000 to 1000 psi will cause an error of approximately 1%. Larger errors can exist for rapid depressurization to less than 600 psi, but under these conditions, pressurizer level is unimportant, because of initiation of ECCS components to provide sufficient primary makeup. For boiling to occur in the reference leg, the system pressure must be below 300 psi and therefore need not be considered as discussed above.

Item 3

Review all safety and control setpoints derived from level signals to verify that the setpoints will initiate the action required by the plant safety analyses throughout the range of ambient temperatures encountered by the instrumentation, including accident temperatures. Provide a listing of these setpoints.

Response

No reactor protection system actions are initiated by these instruments; therefore, the error induced by the increase in the reference leg temperature need only be considered for post-accident monitoring. During post-accident monitoring, level indication alone is not relied upon but rather system temperature and pressures are used to assure adequate core cooling and to confirm the adequacy of the level indications. No setpoint revisions are required.

Item 4

Review and revise, as necessary, emergency procedures to include specific information obtained from the review and evaluation of Items 1, 2 and 3 to ensure that the operators are instructed on the potential for and magnitude of erroneous level signals. All tables, curves, or correction factors that would be applied to post-accident monitors should be readily available to the operator. If revisions to procedures are required, provide a completion date for the revisions and a completion date for operator training on the revisions.

Response

The required operator guidance is in the process of being prepared. It is expected that all procedural revisions required as well as the necessary operator training will be completed prior to October 31, 1979.

TABLE 1

Correction to indicated water level for post-accident temperature effects of the steam generator operate level, steam generator full range level, pressurizer level, and core flood tank level (for tanks with water reference legs).

| <u>Reference leg temperature (°F)</u> | <u>Correction to indicated level (%) of full span</u> |
|---|---|
| 100 | 2.0 |
| 150 | 3.0 |
| 200 | 5.0 |
| 250 | 7.0 |
| 300 | 9.0 |
| 350 | 12.0 |
| 400 | 15.0 |

Note: The increase in reference leg temperature causes the measured level to indicate higher than actual level.