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DENTON,H.R. Office of Nuclear Reactor Regulation, Director
STOLZ,J.F. Operating Reactors Branch 4

SUBJECT: Submits status of efforts to implement NUREG-0737 items. Items II.F.2,II.E.4.1,II.E.1.2 & II.K.2.10 have been implemented.Forwards justification for delayed implementation of Item II.F.2 Unit 3.

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373-4083

August 3, 1981

Mr. Harold R. Denton, Director
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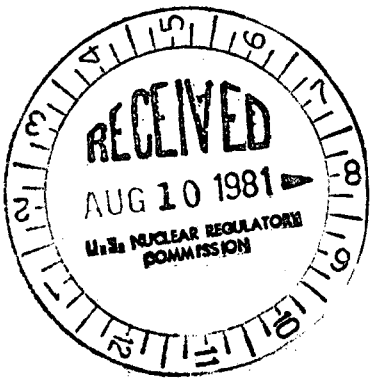
Washington, D. C. 20555



Attention: Mr. J. F. Stolz, Chief
Operating Reactors Branch No. 4

Re: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287

Dear Sir:

My letter of December 15, 1980 provided an initial review of the status of the efforts of Duke Power Company to implement NUREG-0737 items at Oconee Nuclear Station. For outage-related items committed to be implemented by July 1, 1981 and January 1, 1982, it continues to be our plan to complete the modifications during the forthcoming refueling outages of Oconee Units 1 and 2.

With regards to additional inadequate core cooling instrumentation (Item II.F.2), Duke has discussed this latter item with the NRC Staff on May 13, 1981 and will be providing more information on a conceptual design this fall. Further justification for the delay is provided in Attachment 1.

For Oconee Unit 3, the NUREG-0737 items with July 1, 1981 completion dates (dedicated hydrogen penetrations, Item II.E.4.1; safety grade auxiliary feedwater initiation, Item II.E.1.2; safety grade auxiliary feedwater flow indication, Item II.E.1.2; and safety grade anticipatory reactor trip, Item II.K.2.10) have been implemented. These items have been previously implemented on Unit 2 and are being implemented on Unit 1 during the current refueling outage.

However, for Oconee Unit 3, five modifications, in addition to the inadequate core cooling instrumentation referred to above, with required completion dates of January 1, 1982 have not been implemented. The proposed completion dates, justification for the delay and compensating actions during the interim are provided in Attachment 2.

As detailed in the attached, it is expected that the design work will be completed in the last quarter of 1981. However, it is not considered that a forced shutdown of Oconee Unit 3 is warranted solely to install these plant modifications in light of the acceptable performance of the existing

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plant systems of comparable function and the relatively low likelihood that an event which requires these items to function will occur. Furthermore, current load projections are that adequate generation reserves will not exist if Oconee Unit 3 is forced to shut down this fall. Attachment 2 details the projected generation reserves through the 1982 winter peak. This information is based on the assumptions that Oconee Unit 1 will not return to service until December 1981; Oconee Unit 2 will be shut down in September 1981 for refueling outage; and no other major forced outages occur. It does not take into account the potential for a further extension of the Unit 1 (860 mw) due to repair of the failed core barrel assembly thermal shield bolts, nor any delays that may occur during the startup of McGuire Unit 1 (1180 mw).

Therefore, based on the need for power, and the minimal impact on safety that the delay will have, these modifications will be completed on Oconee Unit 3 during the next refueling outage, currently scheduled for June 1982, or a cold shutdown of sufficient duration after January 1, 1982, whichever is earlier.

One remaining item, with a required completion date of July 1, 1982 is the reactor coolant system high point vents. This item will be implemented on Oconee Units 1 and 2 during the forthcoming refueling outages. For Oconee Unit 3, which has this modification partially installed, the high point vents will be fully implemented during the next refueling outage, currently scheduled for June 1982 or a cold shutdown of sufficient duration after January 1, 1982, whichever is earlier. Operation of this system is held in abeyance pending Staff review and approval of the design.

In summary, it is considered that the incremental improvement in safety at Oconee Unit 3 does not justify the forced shutdown of the unit solely to install the above items. At the latest, these items will be implemented during the Oconee Unit 3 refueling outage, currently expected to start in June 1982. Unless informed to the contrary, it will be considered that this schedule is acceptable.

Very truly yours,

William O. Parker, Jr.

RLG/php
Attachments

Duke Power Company

Oconee Nuclear Station

Attachment 1

Justification for Delayed Implementation of Selected NUREG-0737 Items on Oconee 3

With regard to the modifications discussed in this Attachment, the following points apply:

1. The equipment modifications are being provided to cover incidents in excess of design basis accidents.

2. All of these modifications will not mitigate the consequences of an accident, but will only provide additional information to the operator on plant status.

3. The design basis accident generates little hydrogen; however, plant procedures provide for purging through the hydrogen recombiners whenever a LOCA condition occurs.

4. The existing equipment is capable of providing the necessary information for design basis accidents.

5. There is only a low probability of an accident beyond design basis events during the requested extension.

Item 1 - Inadequate Core Cooling Instrumentation.

By letter dated January 2, 1981, Duke Power provided an extensive response to this item. This was followed by a meeting with the NRC Staff on May 13, 1981 where a concept of hot leg level measurement was presented. Currently, engineering efforts are in progress to review available systems and establish an acceptable design. A follow-up meeting is planned for later this year. The final design of this system is not complete. The current design of instrumentation was fully described in my January 2, 1981 submittal. In light of the adequacy of the current design, it is considered that a delay in installation beyond January 1, 1982 is acceptable.

Item 2 - Post Accident Sampling System.

This modification is split into two areas covering liquid and gas sampling. On the liquid part, the design is completed and most work in the containment has already been completed. No penetration work yet has been done, but most of this portion can be completed without an outage. For the gas sampling, the design is also completed, and the work in the auxiliary building can be installed on line. The present sampling equipment in service is located in the auxiliary building, near the service elevator lobby. Using specific shielding and limited access to the auxiliary building during sampling, this system can be used to sample highly radioactive nuclear coolant water. The station health physics group will make specific procedure requirements as needed to obtain samples in a post accident mode.

Item 3 - High Range Reactor Building Radiation Monitor.

The design on this modification will be completed by September 1, 1981. An outage is required for most of the work, none of which has been done. My letter dated July 23, 1981 discusses delays in qualification of the selected equipment and the decision not to install the instrument until it passes the qualification testing.

The present instrumentation that is in service are four area radiation monitors and one airborne radiation monitor. None are safety grade or environmentally qualified. One requirement of NUREG-0737 is that the airborne monitor have a range of up to 10^5 mCi/cc. Per NUREG-0592, our present monitor is rated up to 10^3 mCi/cc, which is among the highest in the country. In addition to this equipment, there are two corridor area monitors in service. These would be utilized if the reactor building monitors become inoperable.

Item 4 - Hydrogen Analyzer System.

The design is complete. No installation work has been done. An outage is required to do the work in the containment.

At present, there are no automatic instruments available to analyze for hydrogen in containment. Manual samples can be obtained and tested.

Station procedures require that the portable hydrogen recombiner is to be connected to the reactor building in cases of emergency and will be operated to maintain a safe level of hydrogen concentration.

Item 5 - Wide Range Reactor Building Pressure Instrumentation.

The design is completed. No installation work has been done. An outage is required for only part of the work. All work that is in the penetration room can be done on-line. At present, there are 3 safety grade ES channels in operation with a range of -15 psig to +15 psig. In addition, there is a non-safety grade transmitter with a range of -15 psig to +70 psig. All instrumentation is in the penetration room and is environmentally protected.

Item 6 - Wide Range Reactor Building Water Level Instrumentation.

Design is complete. No installation work has been done. Most of the work is in the containment sump and, thus, an outage is required.

At present, there are two transmitters in service with a maximum range of 0-120" H_2O.

These transmitters are non-safety grade; however, the implications of loss of the exact water level in the sump in the post accident mode are minimal.

All material for the modifications is on-site with the exception of the high-range reactor building radiation monitor.

Duke Power Company

Oconee Nuclear Station

Attachment 2

Projected Generation Reserves

August 1981 through February 1982

Table I - Provides the projected generation reserves with the preferred schedule and includes the current planned major outages this fall.

Table II - Provides the projected generation reserves for the last quarter of 1981 with Oconee 3 out in addition to the outages in Table I.

TABLE I

VACAR/DUKE RESERVES

	AUG 1981 VACAR	AUG 1981 DUKE	SEP 1981 VACAR	SEP 1981 DUKE	OCT 1981 VACAR	OCT 1981 DUKE	NOV 1981 VACAR	NOV 1981 DUKE	DEC 1981 VACAR	DEC 1981 DUKE	JAN 1982 VACAR	JAN 1982 DUKE	FEB 1982 VACAR	FEB 1982 DUKE
Capacity-April 1981 Reports to DOE	36333	12048	36333	12048	36333	12048	36333	12048	37911	13228	37911	13228	37911	13228
Capacity of Nuclear Units not in commercial operation	-	-	-	-	1180	1180	1180	1180	-	-	-	-	-	-
Net Capacity Transactions	+900	+93	-	+93	-	+93	-	+93	-	+93	-300	+93	-300	+93
Total Capability	37233	12141	36333	12141	37513	13321	37513	13321	37911	13321	37611	13321	37611	13321
Scheduled Outages	1715	925	5354	1720	8313	3735	6258	2260	4259	1420	2667	430	3073	404
Capability After Scheduled Outages	35578	11216	30979	9173	29200	9586	31255	11061	33652	11901	34944	13321	34538	13321
Miscellaneous Continuous Capacity Reductions*	1300	500	1300	500	1350	550	1350	550	1350	550	1350	550	1350	550
Availability Capacity	34218	10716	29679	8673	27850	9036	29905	10511	32302	11351	33594	12341	33188	12367
Expected Peak	29461	10460	26704	9408	22142	8153	23910	9140	26895	10125	29277	10760	28194	10445
Reserved Before Forced Outages (MW)	4757	256	2975	513	5708	883	5995	1371	5407	1226	4317	1581	4994	1922
Reserves %	16.1	2.4	11.1	5.5	25.8	10.8	25.1	15.0	20.1	12.1	14.7	14.7	17.7	18.4

* Reductions due to problems with pulverizer mills, pumps, fans, fuel quality, feedwater heaters, turbine blades, etc.

Notes: Major Unit Outages - Oconee 1 (860 MW) June 28 - Nov. 29; Oconee 2 (860 MW) Sept. 20 - Dec. 13; Belews Creek 2 (1120 MW) Oct. 4 - Oct. 31; Marshall 4 (620 MW) Oct. 25 - Nov. 1.

Duke Reserves in September will be in erased by any McGuire 1 precommercial generation.

VACAR and Duke Reserves as presented are considered upper limits or available reserves and subject to wide variations between those listed and actual historical.

TABLE II

VACAR/DUKE RESERVES

WITHOUT OCONEE 3

	OCT VACAR	1981 DUKE	NOV VACAR	1981 DUKE	DEC VACAR	1981 DUKE
Capacity - April 1981 Reports to DOE	36333	12048	36333	12048	37911	13228
Capacity of Nuclear Units not in commercial Operation	1180	1180	1180	1180	-	-
Net Capacity Transactions	-	+93	-	+93	-	+93
Total Capability	37513	13321	37513	13321	37911	13321
Scheduled Outages	9738	4595	7508	3120	4133	2280
Capability After Scheduled Outages	27775	8726	30005	10201	33778	11041
Miscellaneous Continuous Capacity Reductions*	1350	550	1350	550	1350	550
Availability Capacity	26425	8176	28655	9657	32428	10491
Expected Peak	22142	8150	23910	9140	26895	10125
Reserves Before Forced Outages (MW)	4283	26	4745	511	5533	365
Reserves %	19.3	0.3	19.8	5.6	20.6	3.61

*Reduction due to problems with pulverizer mills, pumps, fans, fuel quality, feedwater heaters, turbine blades, etc.

See Notes in Table I.