

JUL 15 1987

Lowell Magleby
EG&G Idaho
P. O. Box 1625
Idaho Falls, Idaho 83415

Dear Mr. Magleby:

Enclosed is a letter from Duke Power Company, dated May 14, 1987, which responds to the two questions raised in our request for additional information. These questions pertained to the Oconee Nuclear Station and concerned the high reactor pressure trip setpoint. This is being reviewed by you under FIN D6039.

Sincerely,

151
Harry Balukjiian, Nuclear Engineer
Thermal-Hydraulic Performance Section
Reactor Systems Branch
Division of Engineering & Systems Technology

Enclosure:
As stated

cc: R. Jones
H. Pastis

Contact: H. Balukjiian, SRXB
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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

May 14, 1987

U.S. Nuclear Regulatory Commission

~~Document Control Desk~~

Washington, D.C. 20555

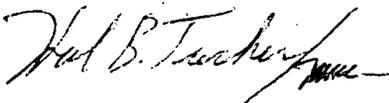
Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287
High Pressure Reactor Trip Setpoint

Gentlemen:

By letter dated August 13, 1986, Duke Power Company (Duke) submitted a proposed amendment to the Oconee Facility Operating License and revisions to the Oconee Nuclear Station Technical Specifications. The proposed amendment would raise the setpoint for a reactor trip on high pressure.

By letter dated March 31, 1987, NRC staff requested additional information for the review of the subject amendment request. Please find attached the requested information.

Very truly yours,



Hal B. Tucker

PJN/173/jgm

xc: Dr. J. Nelson Grace, Regional Administrator
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DUKE POWER COMPANY
OCONEE NUCLEAR STATION

HIGH REACTOR PRESSURE TRIP SETPOINT

RESPONSES TO NRC REQUEST FOR ADDITIONAL INFORMATION

1. Request:

Considering the turbine bypass capabilities and other plant specific features for Oconee Units 1, 2, and 3, will raising the reactor trip on high pressure to 2355 psig while keeping the Power Operated Relief Valve (PORV) setpoint at 2450 psig result in more frequent lifting of the first bank or additional banks of the main steam safety valves (MSSVs)? Also, will the proposed Technical Specification change result in more frequent lifting of MSSVs than for the original plant design (i.e., 2355 psig high pressure trip, 2255 psig PORV setpoint and no anticipatory reactor trip on turbine trip). Provide the bases for your response.

Response:

Raising the reactor trip setpoint on high RCS pressure to 2355 psig while keeping the PORV setpoint at 2450 psig will not result in more frequent lifting of the first bank of main steam safety valves (MSSVs), for the current plant conditions or the original design. Lifting of the first bank of MSSVs is independent of the high pressure trip setpoint, as the first bank is designed to lift any time the main steam pressure exceeds the secondary system design pressure of 1050 psig (which is dependent on RCS temperature). This will occur any time reactor trip occurs above a certain power level (approximately 20%). It is possible, however, that the frequency of lifting the first bank of MSSVs will be reduced with the proposed increased high pressure trip setpoint because a number of reactor trips above 20% power may be avoided.

It is possible that additional MSSVs may lift following reactor trips with the proposed increased high RCS pressure trip setpoint. The higher trip setpoint could allow some additional heatup of the RCS prior to reactor trip during undercooling transients. This would lead to a slightly higher peak post-trip steam line pressure and the possibility that additional MSSVs could lift. However, it is the design function of the MSSVs to relieve the excess steam generated after trip and is therefore not a significant concern if additional valves are challenged. It is also not a significant concern when the excess steam relief capability of Oconee (112% of design) is considered. It is intended that by increasing the high RCS pressure trip setpoint the overall frequency of MSSV lifting will be lowered.

The frequency of the MSSVs lifting under the proposed Technical Specification change will not increase over the original design. For the original design, without the anticipatory reactor trip on turbine trip, the MSSVs still lifted following turbine trip (above a certain power level). With the original design (with the PORV functional), the RCS would be able to heat up further before reactor trip, thus possibly challenging more MSSVs. The frequency of MSSV lifting will be the same or possibly reduced with the higher trip setpoint.

2. Request:

If the proposed change will result in more frequent lifting of the MSSVs than for the current conditions or the original design, then state why the proposed change is acceptable.

Response:

As discussed above, the proposed change is not expected to result in more frequent lifting of the MSSVs than the current conditions or the original design. Since the question implies that lifting MSSVs is undesirable, presumably due to the potential failure of MSSVs to reseat, the following background information is provided. The operating experience at Oconee clearly indicates that the MSSVs have performed their design function very adequately. In over twelve years of operation and greater than approximately 1500 challenges to the MSSVs, there has not been a single failure to reseat. The proposed restoration of the original RCS high pressure trip setpoint, while leaving the PORV at its present setpoint, seeks to possibly reduce the number of reactor trips compared to the present configuration. It would also limit the potential RCS heatup before trip to less than that resulting from the original design. Both situations tend to reduce the frequency of MSSV lifting. Should the RCS heat up to the proposed setpoint and still trip, the lifting of the MSSVs presents no significant concern, as there remains a very high probability that a successful reseating will follow.