

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8111090495 DOC. DATE: 81/11/03 NOTARIZED: NO
 FACIL: 50-287 Oconee Nuclear Station, Unit 3, Duke Power Co.
 AUTH. NAME: PARKER, W.O. AUTHOR AFFILIATION: Duke Power Co.
 RECIP. NAME: NOVAK, T.M. RECIPIENT AFFILIATION: Assistant Director for Operating Reactors

DOCKET #
05000287

SUBJECT: Submits info re reactor safety study Methodology application program, in response to NRC 810908 ltr. Study provides useful insight into dominant accident sequences & contributing factors.

DISTRIBUTION CODE: A001S COPIES RECEIVED: LTR 1 ENCL 0 SIZE: 3
 TITLE: General Distribution for after Issuance of Operating License

NOTES: AEDD/Dornstein:1cc

05000287

	RECIPIENT ID CODE/NAME	COPIES LTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTR ENCL
ACTION:	ORBI #4 BCI 01	13 13		
INTERNAL:	ELDI	1 0	IREI 06	2 2
	NRR/DHFS DEPY03	1 1	NRR/DL DIR	1 1
	NRR/DL/DRAB	1 0	NRR/DSI/RAB	1 1
	REG FILE 04	1 1		
EXTERNAL:	ACRS 09	16 16	LPDR 03	1 1
	NRC PDRI 02	1 1	NSIC 05	1 1
	NTIS	1 1		

NOV 13 1981

TOTAL NUMBER OF COPIES REQUIRED: LTR

42

ENCL

0

27

DUKE POWER COMPANY

POWER BUILDING

422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

November 3, 1981

TELEPHONE: AREA 704
373-4083

Mr. Thomas M. Novak
Assistant Director for Operating Reactors
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: Oconee Unit 3
RSSMAP Report



Dear Mr. Novak:

The following information is submitted in response to your letter of September 8, 1981 concerning the Reactor Safety Study Methodology Application Program (RSSMAP) study of Oconee Unit 3. Duke Power Company previously (by our letter of September 22, 1980) provided comments on an earlier draft report of this study. We note with appreciation that some of our comments were considered in the preparation of the final version of the report. Specific comments on the conclusions of the study reported in Section 6.3.1 and some discussion on changes in plant systems and procedures implemented at Oconee subsequent to the RSSMAP study with potential positive impact on the RSSMAP estimated probabilities and consequences of accidents are provided in the following paragraphs.

With regard to the frequency of an interfacing system LOCA event, we have instituted a program for periodic leakage testing of the check valves of interest and further have ceased the stroke testing of the normally closed MOV's LP-17 & -18 at operating conditions. (Stroke testing of these valves is done only at cold conditions.) Since the leak-leak failures are essentially eliminated by the periodic leak testing program and by elimination of the MOV stroke testing at operating conditions and since the leak-rupture and rupture-rupture failures are significantly small with the normally closed configuration of the MOV's, the event V is now believed to be a non-significant risk contributor.

Plant modification has been completed to eliminate the AC dependency of the turbine driven emergency feedwater pump. With this modification, the availability of the emergency feedwater system during accidents involving loss of offsite power or loss of all AC power has improved. Consequently, the frequency of core melt accidents initiated by or involving these events would be less than that estimated in the RSSMAP study.

Two changes which are outside the scope of the RSSMAP study and which came to our attention in conjunction with the ongoing NSAC-Duke Oconee PRA program are being implemented now. One is a change in the emergency procedures to deal with a situation in which the LPI pumps could be running at shutoff head for an extended period of time. Such a situation is postulated to occur during

8111090495 811103
PDR ADOCK 05000287
P PDR

A001
51/0

Mr. Thomas M. Novak
November 3, 1981
Page 2

certain small break LOCA and severe steamline break events if the RCS does not depressurize sufficiently below the LPI actuation setpoint. Although the operators are aware of the need to secure the LPI pumps within reasonable time under this situation, the existing emergency procedures do not include this requirement. A change in the applicable procedures is now being implemented to include the necessary guidance. The other change pertains to two ICS simulator relays. A postulated spurious energization of these relays could lead to a feedwater transient (resulting in a reactor trip) and the turbine bypass valves failing closed. A modification of the system to deactivate this circuitry is being implemented. The interim results of the Oconee PRA are being monitored to assure early identification of any important risk outliers. At this point, no additional items have been identified which merit consideration in the near term.

A number of the post-TMI changes to plant systems and procedures have contributed to improved safety both with respect to probabilities and consequences of accidents. Among the measures contributing to reduced probabilities of accidents are:

- (a) Modification to the turbine EHC System to reduce the frequency of turbine-reactor trips.
- (b) Modifications to the main feedwater system to minimize the occurrence of feedwater transients.
- (c) Changes in the control system power supply to minimize the occurrence of power supply failure induced transients and to better cope with such events.
- (d) Modification of the emergency feedwater system initiation, control, and indication functions for better reliability and performance.

The following other post-TMI efforts, which are in various stages of implementation, are considered to effect further reduction in the probabilities and consequences of accidents.

- (a) Renewed vigilance and searching reviews now being conducted on operational occurrences through the operating experience evaluation program.
- (b) Control room design review and incorporation of safety parameter display system.
- (c) Improved operator training, development and implementation of improved procedures and the utilization of shift technical advisors.

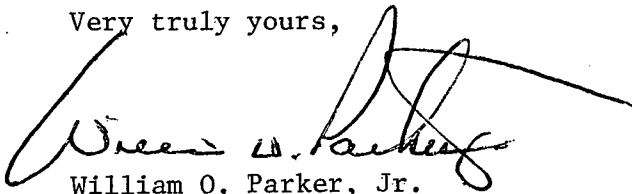
Mr. Thomas M. Novak
November 3, 1981
Page 3

- (d) Implementation of RCS high point vents, post-accident sampling panel, and dedicated hydrogen penetrations.
- (e) Implementation of PORV/PSV position indicator and RCS subcooling monitor.
- (f) Implementation of accident monitors and expanded emergency planning programs and facilities.

We are not certain whether the conclusion reached in the Oconee RSSMAP study regarding hydrogen burning and the associated impact on containment is valid. There is reason to believe that the Oconee containment failure pressure is much higher than that assumed in the RSSMAP study (183 psia versus 133 psia). Furthermore, the MARCH code treatment of hydrogen in regard to its generation in the core, accumulation in the containment, and degree of burn in the containment is generally recognized to be very conservative, particularly for small break and transient induced core melt events. A more realistic analysis of the containment accident process is expected in the NSAC-Duke Oconee PRA analysis.

It is our impression that the Oconee RSSMAP study has been a very worthwhile undertaking. Although there are some limitations in this study, it still provides some useful insights into the dominant accident sequences and their contributing factors.

Very truly yours,



William O. Parker, Jr.

PMA/php

cc: Mr. Robert F. Bernero, Director
Division of Risk Analysis
Office of Nuclear Regulatory Research
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555