



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

October 14, 1982

*F. Johnston*  
*J. Knight*  
*D. Miller*  
*M. Sullivan*

Docket No. 50-302

MEMORANDUM FOR: H. Denton S. Hanauer E. Case  
J. Carter R. Vollmer DMCrutchfield  
D. Eisenhower R. Mattson SAVarga  
R. Purple H. Thompson DBVassallo  
T. Novak J. Snizek RAClark  
G. Lainas T. Ippolito C. Heltemes  
F. Miraglia C. Michelson

THRU: John F. Stolz, Chief, Operating Reactors Branch #4,  
Division of Licensing *JK*

FROM: Sydney Miner, Sr. Project Manager  
Operating Reactors Branch #4, Division of Licensing

SUBJECT: DAILY HIGHLIGHT

Crystal River Unit No. 3 (CR-3)

About 2:00 p.m. today (October 14, 1982) Florida Power Corporation (FPC) declared an unusual event for CR-3 and started shutting the plant down. Earlier a fire alarm was received in the reactor building. On entering the building no fire was noticed but the alarm came from the vicinity of the reactor coolant drain tank. Subsequently, there was an increase in the level of the reactor building sump, level indication of the reactor coolant drain tank was lost and high radiation was measured in the reactor building. Subsequently, the licensee started to shut the plant down to investigate. Earlier in the day the cooling coil in the drain tank failed and was isolated. The speculation is that rupture disk on the drain tank failed and R/A steam is leaking through the pressurizer safety valves into the reactor building.

*Sydney Miner*  
Sydney Miner, Sr. Project Manager  
Operating Reactors Branch #4  
Division of Licensing

cc:  
ORB#4 File  
JStolz  
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JORDAN83-765 PDR





TO ALL LICENSEES OF OPERATING PLANTS AND APPLICANT FOR  
OPERATING LICENSEES OF PRESSURIZED WATER REACTORS

Gentlemen:

Subject: NUREG-0737, ITEM ~~D-II.1~~ <sup>2</sup>

*Relief and Safety Valves  
Test Programs*

In accordance with this post-TMI requirement Licensee and Applicants were required to conduct testing to qualify reactor coolant system relief and safety valves under expected operating conditions for design-basis transients and accidents.

In response to this requirement, the PWR Utilities Owners Group commissioned the Electric Power Research Institute (EPRI) to establish a generic test program in which full size valves representative of all of the relief and safety valves in operating PWR plants and those under construction would be tested under fluid conditions that would envelope those that the various valve types could be exposed to on the plants.

EPRI did establish and carry out the specified generic program. There has been considerable interaction between technical personnel of the NRC staff, the PWR Owners Group, and EPRI during the period that the test program was being developed and the actual testing performed.

As you are aware the actual testing in the EPRI program was completed by the end of calendar year 1981. During the period of the valve testing

the NRC staff was kept informed by EPRI of the ongoing valve test results and also, it is our understanding that valve manufacturers, NSSS Vendors, and PWR Licensees and Applicants were also kept informed of all test results for valves that were in service or planned to be in service on PWR plants for which they had any responsibility.

As the EPRI testing progressed, it became evident to the staff that for safety valves, while not necessarily generically obvious as a safety concern, the results of the testing seemed to imply that adjusting ring settings of safety valves on various plants might not be such as the assure optimum valve performance. The adjusting rings here referred to are those on safety valves that affect valve blowdown and also valve lift.

Depending upon ring adjustment, some anomalies of safety valve performance were noted, ranging from valve chatter to, on a few tests, failure to achieve full lift, and thus full ASME rated relieving capacity. While the EPRI testing was being performed, the staff performed some audits of plant overpressure protection analyses to determine primarily, the effect on plant safety of the failure of valves to reach full lift, and thus full relieving capacity. The results of these audits indicated that PWR plants, in general, have additional safety valve capacity above the minimum that is necessary to comply with ASME Code pressure limit requirements.

*to the extent that the NRC staff will all the PWR plants have sufficient capacity - all staff audits.*

In the last few months, the staff has received the EPRI generic test reports and many plant specific submittals from PWR Licensees and Applicants. Altogether these submittals contain a large amount of test data and each PWR Licensee/Applicant's discussion of how the EPRI test results relate to the valves on their specific plant. Additionally, many plant specific submittals stated a few months more time was needed to complete the plant specific evaluation of EPRI test results.

Because of the large amount of information involved, the staff has only began its detailed review of the submittals received to date. As noted, many of the plant specific submittals, indicated a few more months, were required to assess the implications of generic test results on individual plant applications.

In this regard, a specific application of the generic EPRI test data to plant specific application has recently come to the attention of the NRC staff ~~that~~ we feel all PWR utilities should <sup>be</sup> ~~be~~ advised because of the potential for possible generic safety implications.

The EPRI generic test data for safety valves indicates that in a few tests, full valve lift and thus full ASME rated relieving capacity was not achieved for some adjusting ring settings. Based on the test data, this is particularly prevalent for the model 31739 Dresser Safety Valve. This valve is utilized on several operating PWR plants. Based on information the NRC staff has recently received from Dresser, NSSS

Vendors, and PWR Licensees, the NRC staff is concerned that accurate information may not exist as to the current safety valve adjusting ring settings for valves now in service on some operating plants and thus an assessment of existing specific minimum valve relieving capacity may not be possible in terms of correlating against EPRI test results.

One Licensee in particular that utilizes the Dresser 31739 valve has recently advised the staff that as a result of reviewing EPRI test results and available data on the safety valve ring settings decided that enough uncertainty existed as to available valve capacity that in accordance with Plant Technical Specification requirements declared the safety valves "inoperable" and shut the plant down to verify and/or change safety valve adjusting ring settings.

The purpose of this letter is to specifically bring to the attention of PWR Licensees and Applicants the fact that EPRI data indicates that there can be some variation in valve relieving capacity depending on ring setting, and that for some ring settings, rated ASME relieving capacity may not be attained. ~~The data indicates that, in this regard, of~~  
the data indicates that  
all safety valves tested, the Dresser 31739 valve was most sensitive to ring adjustment.

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If it has not already been performed, all PWR Licensees and Applicants are requested to expeditiously review the EPRI safety valve data considered representative of the valves they have in service or planned



*whether the ~~existing~~ settings of the installed valves would permit the safety valves to*

to be in service to assess the affect of ring adjustment on valve performance, particularly for affect on relieving capacity. This information should be related to the actual ring settings of valves in service and a determination made as to whether the valves with existing adjustments would be expected to perform adequately <sup>within</sup> such that no FSAR Safety Limits or Plant Technical Specification Limits ~~would be violated.~~ As noted above, one Licensee utilizing the Dresser 31739 valve determined that his valves were not in compliance with the Plant Technical Specifications.

Based on the EPRI data the NRC staff considers the need for this evaluation to be extremely urgent for plants that utilize the Dresser 31739 safety valve but this evaluation should also be made for other Dresser valve models and for safety valves of other manufacturers design should also be performed.

Sincerely,  
  
D. Eisenhut, Director  
Division of Licensing  
Office of Nuclear Reactor Regulation

*Please provide the results of your review to us within 20 days of the date of this letter. If you conclude that your plant's safety valves are inoperable based on your evaluation, contact us immediately and submit your plan for returning the valves to an operable condition. If you conclude that the safety valves on your plant are operable, provide the results of your review to us within 20 days of the date of this letter.*