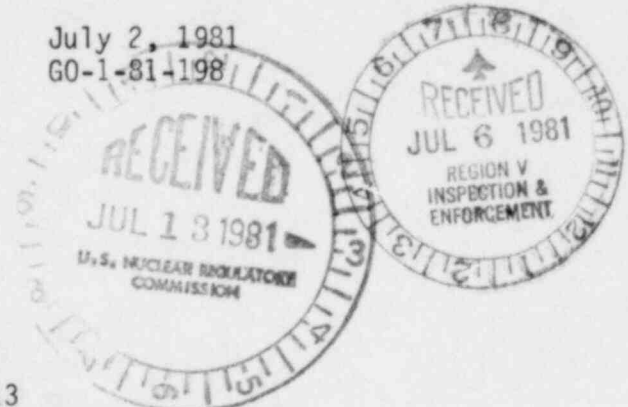


## Washington Public Power Supply System

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Nuclear Regulatory Commission  
Region V  
Suite 202 Walnut Creek Plaza  
1990 N. California Boulevard  
Walnut Creek, California 94596

July 2, 1981  
GO-1-81-198



Attention: Mr. B. H. Faulkenberry  
Chief, Reactor Construction  
Projects Branch

Subject: PROJECTS 1 AND 4  
DOCKET NOS. 50-460 AND 50-513  
POTENTIALLY REPORTABLE CONDITION 10CFR50.55(e)  
RCS ATTACHED PIPING

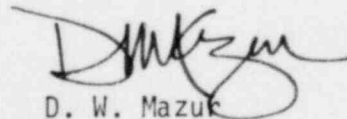
- References:
- 1) Telecon TJ Houchins, Supply System to DF Kirsch,  
Region V Nuclear Regulatory Commission dated  
November 13, 1981
  - 2) GO-1-80-380, dated December 12, 1980,  
DW Mazur to RH Engelken, Director

In reference 1) the Supply System informed your office of a potentially reportable deficiency under 10CFR50.55(e) and reference 2) was an interim report on the subject condition.

Attachment A includes a restatement of the identified condition and a brief description of our planned and on going actions to evaluate the condition. Due to the nature and extensive amount of time necessary to complete our design analysis we have concluded that this is a reportable condition in accordance with paragraph (IV) of 10CFR50.55(e). Thus in keeping with reference 2) we are submitting Attachment A as an interim report. However, it is impossible, at this time, to provide a final completion date for the subject design analysis. Therefore the Supply System will provide your office with interim status reports on a quarterly basis.

If you have any questions or desire further information, please advise.

Very truly yours,

  
D. W. Mazur  
Program Director  
WNP-1/4

DWM:MER:lm  
Attachment

cc: CR Bryant, Bonneville Power Administration/399

IE27  
5/11

Attachment A  
WNP-1/4  
Docket Nos. 50-460 and 50-513  
Reportable Condition 10 CFR 50.55(e)  
(Potential) Reactor Coolant System  
Attached Piping Second Interim Report

BACKGROUND

In GO-1-80-38 dated 12/12/80, the Supply System provided a report on this subject to the NRC. This report concluded that the concerns stemming from analysis performed on piping attached to the RCS represented a potentially reportable condition and that a report would be provided in the second quarter of 1981. The purpose of this letter is to apprise the NRC of our on-going program and the results to date.

DESCRIPTION OF DEFICIENCY

B&W originally reported a concern for the ECCS analysis performed which assumes that the piping connected to the RCS loop in which the LOCA pipe break is assumed to occur remains intact during the event. B&W had not analyzed several lines to determine if these assumptions are correct. In addition, B&W recommended that the balance of the RCS attachment piping analyses be reviewed to confirm that the basic analytical techniques used are conservative and that the piping is adequately designed to maintain function and integrity under LOCA conditions.

Since the original report, B&W has performed additional analyses and determined for the reactor coolant pump suction and discharge piping that potential breaks at the pump nozzles will not result in subsequent breaks in the reactor coolant piping adjacent to the pumps. Likewise, the pressurizer surge-line analysis has been completed and the results demonstrate that this line (attachment to hot leg piping) is not of concern. The remainder of the piping analyzed by B&W is still undergoing evaluation.

The A/E for WNP-1/4, United Engineers and Constructors (UE&C), performed a review of all owners supplied RCS attachment piping and confirmed that a Loss of Coolant Accident Anchor Displacement Analysis (LAD) had been performed. Further investigations have raised questions, whether the Static Displacement Method (SDM) which was utilized in the analysis is conservative. The original SDM analysis utilized, as input, static values over applicable LOCA breaks which contributed to the anchor displacement at the terminal end of the pipe run. Historically, this approach has been consistent with standard industry practice and believed to be conservative.

As a result of this current effort, dynamic analyses have been performed in order to demonstrate that the original SDM is conservative. Using worst case time history displacements selected by B&W, a time history LAD analysis was performed for a line in the Decay Heat System (DHR-4-1-14) and Main Steam System (MSS 3-1-28). The results are as follows:

1. The combined pipe stresses (including LOCA and other loadings) did not increase significantly and remained within the allowable limits.

2. Pipe support loads increased significantly, in some cases up to 30 to 50 percent. To date, two supports (DHR) have been determined to have loadings which exceed the design allowables.
3. The component nozzle loads were also determined to increase significantly. The DHR nozzle loads exceeded B&W allowable limits, whereas, the MSS nozzle loads were within B&W allowable limits. B&W is currently evaluating the increased DHR nozzle loads for acceptability.

Although the design allowables are exceeded for the pipe supports, this loading only occurs under faulted conditions. The loadings calculated do not exceed faulted allowable loads for the supports, however, it will result in deflections of those supports. Since the original piping analysis was performed without exceeding design conditions for supports and hence, no deflection, any new analysis which assumes support deflection will result in higher values for pipe stress.

#### SAFETY IMPLICATIONS

Although these two pipe supports would not fail under these revised loading conditions, the loading placed on the piping as a consequence of the support deflection could result in unacceptably high stresses. It has not yet been determined that this is the case.

Since the Dynamic Analysis performed has shown a significant increase in load over the previous Static Displacement Method and the acceptability of the piping in the proximity of the two supports which have been determined to be overstressed (design allowables) cannot be assured without further analysis, it is determined that this is a reportable condition under paragraph (iv) of 10 CFR 50.55(e) since extensive analysis is required.

#### CORRECTIVE ACTION PLANNED

As a result of analyses performed to date, it will be necessary to review/reperform analyses for all attachment piping to the RCS to determine whether design conditions are exceeded following an accident. For those cases where design allowable loadings are exceeded, it will be necessary to perform additional evaluations to determine whether hardware modifications are required.

It is not possible, at this time, to provide a final completion date. The Supply System will provide interim status reports to the NRC on a quarterly basis.