

INTERIM DEFICIENCY REPORT

SAFETY RELATED FLANGE RATING

NAME OF STATION: ST. LUCIE PLANT - UNIT 2

OWNER: FLORIDA POWER & LIGHT COMPANY

ARCHITECT/ENGINEER: EBASCO SERVICES, INCORPORATED

NUCLEAR STEAM SYSTEM SUPPLIER
(NSSS): COMBUSTION ENGINEERING, INC.

DATE OF DEFICIENCY: DECEMBER 21, 1979

INTERIM REPORT FILED: JANUARY 25, 1980

8002040 483

I Summary

During a normal design review process it was noted that the flange material for various safety related systems was specified equivalent to the pipe material (304SS) in lieu of the connecting pump or valve flange material (316SS). Since the ANSI B16.5-1968 pressure and temperature ratings for flanges are dependent upon the types of austenitic stainless steels specified, a review of all safety related stainless steel systems was performed to determine the adequacy of utilizing 304SS flanges. It was determined that the specified system design pressures and temperatures for some 304SS flanges may exceed the ASME code, Section III Paragraph NC 3612.1 standard flange ratings.

Per the requirements of 10CFR50.55(e) the event was deemed potentially reportable and per telecon, FP&L notified the NRC on December 21, 1979 of such. This interim report is being submitted to advise the NRC of the status of this review.

II Description

St. Lucie Unit 2 is designed per the requirements of ASME Code, Section III, 1971 Edition through Summer 1973 addenda, which references the requirements of ASMI B16.5-1968 code. The ANSI B16.5-1968 code provides acceptable temperature and pressure ratings for all flanges in lieu of alternative flange analysis. The ANSI B16.5-1968 code allowables for 304SS are lower than the allowables for 316SS.

During a normal design review process it was noted that the flange material for various safety related systems was specified equivalent to the pipe material (304SS) in lieu of the connecting pump or valve

flange material (316SS). This discrepancy as far as our investigation has identified is a result of the particular St. Lucie Unit 2 interface between the NSSS and the A/E in regard to responsibilities of the NSSS design. The nuclear steam supplier is responsible for the NSSS design and system criteria, whereas the A/E is responsible for the piping layout and stress analysis.

Therefore, all NSSS safety related systems in question utilizing austenitic stainless steel material were examined to determine if there was any discrepancy in material selection in accordance with the code. In all cases, the maximum operating and design temperatures and pressures as specified were initially compared with the ANSI B16.5-1968 code allowable ratings. A summary of the status is tabulated below.

<u>System</u>	<u>No. of Flanges Acceptable</u>	<u>No. of Flanges Questionable</u>
Safety Injection	30	115
Reactor coolant	18	76
Chem & Volume Control	112	36
Sampling	12	7
Fuel Pool	All	--
Waste Management	All	--
Containment Spray	All	--
TOTAL	172	234

It should be noted that the flanges indicated as questionable above have been found for 2 1/2 inches and larger to have a rating above the maximum operating pressure and temperature allowables per ANSI B16.5-1968. We are presently conducting flange analysis to identify if there are any actual deficiencies in these systems.

II DESCRIPTION (Cont'd.)

A breakdown of the number of flanges in question are as follows:

53	2½ inches and larger
181	2 inches and smaller

The status as of January 25, 1980 of design/fabrication/installation is as follows:

2 inches and smaller

105 flanges	Appear on isometrics already prepared
76 flanges	Isometrics have not yet been prepared
Random Stock Supply	Material Status
5%	Installed (estimate)

2½ inches and larger

53 flanges	All isometrics are already prepared
All spools rec'd	Material status
11 flanges	Installed (on 8 spools)

III CORRECTIVE ACTION

Upon completion of the aforementioned review, the corrective action will be either to prove acceptability of the flanges or replacement. Presently we are proceeding as follows:

2 inches and under

In lieu of flange analysis and based upon material availability and construction schedule, we have elected to proceed with replacement flanges. The 304SS flanges will either be replaced with an equivalent 316SS flange or with a 304SS flange of a higher ANSI rating.

2½ inches and larger

We have elected to do flange analysis due to material availability and construction schedule to determine the acceptability of the specified flanges in question. In parallel, we are investigating recent material availability and will issue a "hold" on further installation of the larger bore flanges in question. Upon completion of the analysis, a decision will be made as to whether flange replacement is necessary.

IV SAFETY IMPLICATIONS

This situation was deemed potentially reportable. If the above described review results in identification of a deficiency and was to have remained uncorrected, the corresponding system may not have been adequate to perform its intended safety function.

V CONCLUSION

A final report will be submitted by May 1, 1980 with the results of the review and necessary actions taken.