

B306

REGULATOR INFORMATION DISTRIBUTION SYSTEM

DOCKET NBR: 50-250/251/335 TURKEY PT 3/4  
RECIPIENT: STELLO, V. ST LUCIE I  
ORIGINATOR: UHRIG, R.E.  
COMPANY: FL PWR & LIGHT  
SUBJECT:

DOC DATE: 781115  
ACCESSION NBR: 7811210338  
COPIES RECEIVED:  
LTR 3 ENCL 3  
SIZE: 4

Requests relief from ASME Code Reqs re Ultrasonic Examinations of Piping Welds.  
Recording & eval indications at 20% DAC is impractical. Primary reference level  
(100% DAC) criteria for UT examination provides comparable safety level.

DISTRIBUTION CODE: 8006  
DISTRIBUTION TITLE:  
REQUESTS FOR EXEMPTIONS (ALL TYPES)

NOTARIZED

NAME

ENCL?

FOR ACTION

BR CHIEF  
PROJ MGR  
~~LIC ASST~~  
~~REG FILE~~

W/ENCL  
W/ENCL  
W/ENCL  
W/ENCL  
W/2 ENCL  
W/ENCL  
W/ENCL  
W/ENCL W/2 ENCL  
W/16 ENCL

D EISENHUT

ORB#1 BC

M GROTENHUIS

ORB#1 LA

B GRIMES

ORB#4 BC

P ERICKSON

ORB#4 LA

NRC PDR  
I & E  
J MILLER  
T ABELL  
LPDR  
ACRS

TOTAL NUMBER OF COPIES REQUIRED:

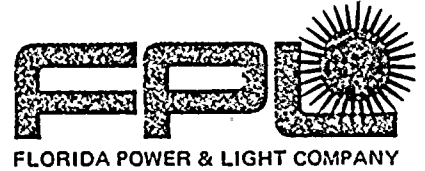
LTR  
ENCL

26  
26

NOV 22 1978

NOTES:

MA 4  
GD



November 15, 1978  
L-78-361

Office of Nuclear Reactor Regulation  
Attention: Mr. Victor Stello, Director  
Division of Operating Reactors  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

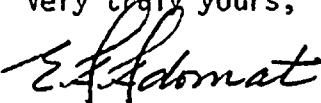
Dear Mr. Stello:

Re: Turkey Point Units 3 & 4, St. Lucie Unit 1  
Docket Nos. 50-250, 50-251 & 50-335  
10 CFR 50.55a(g) (5), Request for Relief  
Ultrasonic Examinations of Piping Welds

Florida Power & Light Company has determined that conformance with certain code requirements concerning ultrasonic examination of piping welds would be impractical for Turkey Point Units 3 & 4 and St. Lucie Unit 1. Therefore, pursuant to 10 CFR 50.12 and 10 CFR 50.55a(g) (5), a request for relief from the code requirements, including information in support of our determination, is attached.

Additional requests for relief are being considered, but have not been completely formulated at this time. For example, as a result of meetings with the NRC staff at our corporate headquarters during the period May 3-5, 1978, it was determined that some valves in the valve testing program were not safety related, so they were deleted from the program. Therefore, we are considering a request to exempt the systems and components contiguous with these non-safety related valves from the examination requirements of the inservice inspection program. Additional requests for relief will be forwarded to your office as they are developed.

Very truly yours,

*for*   
Robert E. Uhrig  
Vice President

REU/MAS/cpc

Attachment

cc: Mr. James P. O'Reilly, Region II  
Harold F. Reis, Esquire

**REGULATORY DOCKET FILE COPY**

7811210

338  
Boo6  
3/3

## ATTACHMENT

Re: Turkey Point Units 3 & 4 and St. Lucie Unit 1  
Docket Nos. 50-250, 50-251, and 50-335  
Request for Relief from ASME Code Requirements

### I. APPLICABILITY

Florida Power & Light Company requests relief from the below listed Code Requirements as they apply to ultrasonic examination of piping welds at Turkey Point Units 3 & 4 and St. Lucie Unit 1 (Class 1 & 2).

### II. CODE REQUIREMENTS

- A. ASME Code Section XI (1974 Edition), Paragraph IWA-2232, Ultrasonic Examination:

"Ultrasonic examination shall be conducted in accordance with the provisions of Appendix I. Where Appendix I (I-1200) is not applicable, the provisions of Article 5 of Section V shall apply."

- B. ASME Code Section V (1974 Edition), Paragraph T-537, Evaluation of Indications:

"All indications which produce a response greater than 20 percent of the reference level shall be investigated to the extent that the operator can evaluate the shape, identity, and location of all such reflectors in terms of the acceptance-rejection standards of the referencing Code Section."

### III. BASIS FOR RELIEF

- A. The 20% DAC (distance-amplitude correction) criteria of paragraph T-537 of Section V is impractical.
- B. The primary reference level (100% DAC) criteria for the ultrasonic (UT) examination of piping welds provides a level of safety comparable to the Section V standards.

### IV. DISCUSSION

- A. Recording and evaluating indications at 20% DAC is impractical for the following reasons:
1. The welded joints in nuclear piping frequently contain Code allowable wall thickness differences (12% of nominal thickness) as well as some weld drop-through, counterbore taper, crown height, etc. These conditions generate an extremely large number of geometric reflectors which produce UT indications greater than 20% DAC.

2. Weld metal in stainless steel piping contains reflectors due to the metallurgical structure which produce a large number of UT indications.
3. Although stress corrosion cracking in stainless steel has been found to exist in low level amplitudes, experience has shown that the typical mode of failure in this type of cracking is not in the weld metal per se, but in the heat affected zone (HAZ) and base metal of the pipe. An experienced UT operator can discriminate stress corrosion cracks from geometric and metallurgical reflectors. Thus, it is not necessary to record and evaluate all reflectors as Section V requires, but only those which are real flaws. It should also be noted that the recording of real flaws is done regardless of Code evaluation criteria (in so far as percentage of DAC is concerned) as part of good examination practice.
4. All examination personnel experience radiation exposure during inservice examinations. The Section V requirement to record and evaluate UT indications at the 20% DAC places an unnecessary burden on the limited number of experienced and qualified examiners available to the owner.

B. The primary reference evaluation (100% DAC) of indications establishes an adequate level of information for the following reasons:

1. Historically, Section XI establishes the 20% DAC evaluation criteria by referencing other Sections of the ASME Code. For example, Paragraph IS-213.2 of the 1970 Code and the 1971 Code references Appendix IX of Section III. Also, as quoted above in part II of this Attachment, Paragraph IWA-2232 of the 1974 Code references Article 5 of Section V. Until 1976, when 10 CFR 50.55a (g) required inservice inspection programs to be upgraded to the 1974 Edition of Section XI, most of these programs had been conducted in accordance with Paragraph IS-213.2 of the Summer 1971 Addenda to Section XI. These programs invoked the 100% DAC evaluation criteria and took exception to the 20% DAC evaluation criteria of Appendix IX of Section III. Such programs were very successful and provided a comprehensive safety level for the components examined.
2. The Summer 1973 Addenda and the Winter 1975 Addenda, with the introduction of Appendix I for vessel UT examination and Appendix III for piping UT examination, confirmed the ASME Section XI Committee position on 50% DAC recording and 100% DAC evaluation of UT indications. In addition, the 100% DAC evaluation criteria for indications found during UT examination of piping welds was reconfirmed by the 1977 Edition of Section XI [Paragraph IWA-2232(b) (1) and III-4500 (1)].

V. ALTERNATIVE EVALUATION CRITERIA

- A. Indications 50% of DAC or greater shall be recorded.
- B. Any indication 100% of DAC or greater shall be investigated by a Level II or Level III examiner to the extent necessary to determine the shape, identity, and location of the reflector.
- C. Any non-geometric indication, regardless of DAC, discovered during the Ultrasonic (UT) examination of piping welds and base metal materials shall be recorded and investigated by a Level II or Level III examiner to the extent necessary to determine the shape, identity, and location of the reflector.
- D. The owner shall evaluate and take corrective action for the disposition of any indication investigated and found to be other than geometric in nature.



12-1

12-1

12-1