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SUBJECT: Responds to GL 88-11, "NRC Position on Radiation Embrittlement of Reactor Vessel Matls & Impact...."

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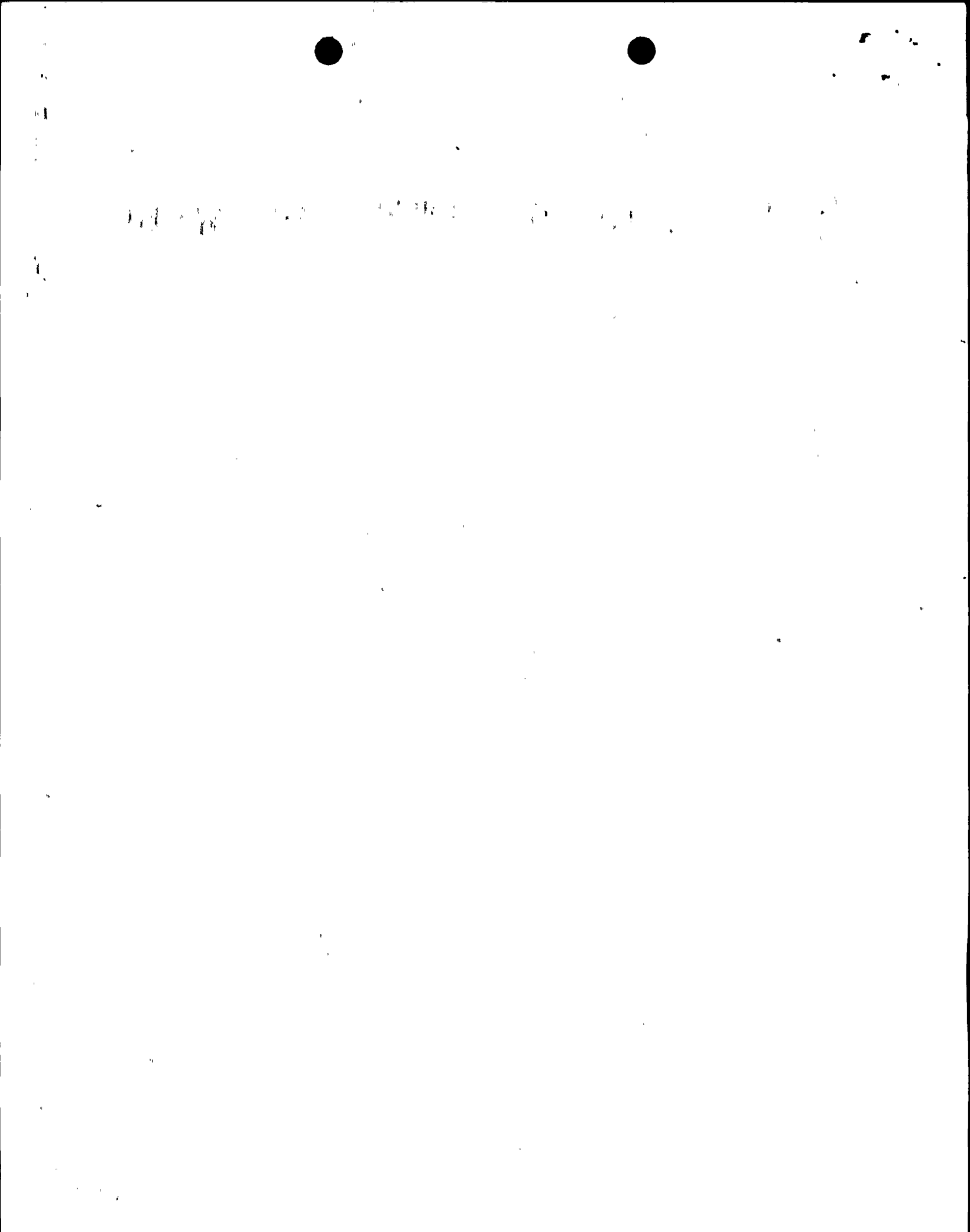
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NOVEMBER 23 1988

L-88-498
10 CFR 50 Appendix G

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Gentlemen:

Re: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
NRC Position on Radiation Embrittlement of Reactor
Vessel Materials and Its Impact on Plant Operations
(Generic Letter 88-11)

Florida Power & Light Company (FPL) has reviewed Generic Letter (GL) 88-11 for St. Lucie Units 1 and 2 and submits the following information relative to application of Revision 2 to Regulatory Guide (R.G.) 1.99 for both units.

St. Lucie Unit 1 Operating License DPR-67 Amendment No. 81 was issued by the NRC on June 5, 1987. This amendment changed the Reactor Coolant System (RCS) Pressure Temperature (P/T) limit figures to be effective up to ten effective full power years (EFPY) of operation. The amendment also changed the Technical Specifications dealing with overpressure protection systems since they are coupled to the revised P/T limit figures.

In the Safety Evaluation related to, and issued with, Amendment No. 81, the NRC stated, at page 4:

"We have used the unirradiated RT_{NOT} for beltline and closure flange materials, which were previously discussed, the neutron fluence estimates of the licensee, the Regulatory Guide 1.99 Rev. 2 method of estimating neutron irradiation damage, and Standard Review Plan 5.3.2 method of calculating pressure-temperature limits to evaluate the licensee's proposed pressure-temperature limits. Our evaluation indicates that the proposed pressure-temperature limits meet the safety margins of Appendix G, 10 CFR 50, for a period of time corresponding to 10 EFPY. Hence, the proposed pressure-temperature limit may be incorporated into the Technical Specifications for St. Lucie Unit 1."

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St. Lucie Unit 2 Operating License NPF-16 Amendment No. 31 was issued by the NRC on June 14, 1988. This amendment changed the RCS P/T limit figures to be effective up to 6 EFY of operation. The amendment also changed the Technical Specifications dealing with overpressure protection systems.

In the Safety Evaluation related to, and issued with, Amendment No. 31, the NRC stated, at pages 2, 3 and 4:

"The staff used equation (3) together with equations (2) and (1) of Regulatory Guide 1.99, Revision 2 (Draft) to calculate the adjusted RT_{NDT} values. Equation (3) gives the "effective" or "adjusted" fluence ($E > 1$ MeV) as a function of distance from the inner surface into the wall, given the fluence ($E > 1$ MeV) at the wall inner surface. Equation (3) is based on a "typical" neutron spectrum at the inner surface and takes into account the effect of spectral hardening with distance into the wall...

... The lowest service temperature, 168 degrees F, the maximum boltup temperature, 80 degrees F and the maximum service pressure, 550 psia, are considered conservative and acceptable to the staff..."

As a result, both St. Lucie Units 1 and 2 include Technical Specification P/T curves generally based upon the predictive methodology of R.G. 1.99 Revision 2 for neutron irradiation on reactor vessel materials.

It should be noted that the St. Lucie Unit 1 P/T curves (out to 10 EFY) are expected to expire about April 1990 and the St. Lucie Unit 2 P/T curves (out to 6 EFY) are expected to expire about September 1990. FPL has prepared a milestone plan for timely submittals to support license amendment issuance prior to expiration of either unit's curves. FPL will remain in contact with the staff concerning these submittals.

GL 88-11 also discussed the staff's ongoing consideration of an amendment to the Pressurized Thermal Shock (PTS) Rule, 10 CFR 50.61, that will replace the equations for RT_{PTS} given in paragraph (b) (2) with the calculation procedure given in Section C.1 of Revision 2 to R.G. 1.99, but will not change the screening criterion. The staff recommended that licensees may wish to repeat

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the calculation of RT_{PTS} values submitted to the NRC in response to the PTS Rule (January 23, 1986 submittal) for the critical materials in the vessel beltline, using Section C.1 of Revision 2 to R.G. 1.99. The purpose of this suggestion is to provide early warning that further flux reduction should be considered in some plants.

FPL has calculated RT_{PTS} for St. Lucie Units 1 and 2 for the critical materials in the vessel beltline using Section C.1 of R.G. 1.99, Revision 2 and has determined that neither unit will exceed the applicable screening criterion through end of life (EOL).

Please contact us if you have any questions about this submittal.

Very truly yours,

DA Bagley

for W. F. Conway
Senior Vice President - Nuclear

WFC/EJW/cm

cc: Malcolm L. Ernst, Acting Regional Administrator, Region II,
USNRC
Senior Resident Inspector, USNRC, St. Lucie Plant

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