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ACCESSION NBR: 8705270061 DOC. DATE: 87/05/17 NOTARIZED: NO DOCKET #
FACIL: 50-389 St. Lucie Plant, Unit 2, Florida Power & Light Co. 05000389
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WOODY, C. O. Florida Power & Light Co.
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SUBJECT: Forwards results of calculations of transition temp shift as function of neutron fluence for facility reactor vessel. Util does not propose to modify Tech Spec Table 4.4-5 re surveillance capsule withdrawal schedule based on results.

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MAY 17 1987

L-87-201

U. S. Nuclear Regulatory Commission
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Washington, D. C. 20555

Gentlemen:

Re: St. Lucie Unit 2
Docket No. 50-389
Neutron Fluence - Reactor Vessel Beltline Materials

By letter L-87-150, dated April 1, 1987, Florida Power & Light Company (FPL) summarized its plans with regard to the St. Lucie Unit 2 reactor pressure vessel material surveillance program. This summary included FPL's intentions to develop a revised Neutron Fluence vs. Transition Temperature Shift (ΔRT_{NDT}) curve (Technical Specification Figure B3/4 4-1) using Regulatory Guide 1.99, Rev. 2 (Draft) methodology and St. Lucie Unit 2 - specific reactor vessel material properties. We believe that application of the draft Regulatory Guide in the development of this curve results in an extremely conservative projection of transition temperature shift.

FPL has completed its calculation of transition temperature shift (ΔRT_{NDT}) as a function of neutron fluence (E > 1 MeV) for the St. Lucie Unit No. 2 reactor vessel. The results of these calculations are shown on Attachment 1.

Based on a neutron fluence of 4.79E19 n/cm^2 (projected to April 2, 2023 end-of-life (EOL)) plus 30% for additional measurement uncertainty and conservatism, the EOL ΔRT_{NDT} is less than 140°F, as indicated on Attachment 1. Accordingly, FPL concludes that the "four surveillance capsule removal schedule" recommended by ASTM Standard E 185-82 is applicable to the St. Lucie Unit 2 reactor vessel material surveillance program. The surveillance capsule withdrawal schedule specified in Technical Specification Table 4.4-5 is consistent with this recommendation and, therefore, satisfactory. Thus, FPL does not propose to modify this Technical Specification Table.

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Following resolution of any NRC concerns related to the development of the new Neutron Fluence vs Transition Temperature Shift (ΔRT_{NDT}) curve, FPL will amend the St. Lucie Unit 2 Technical Specification Bases Figure B3/4 4-1 and update Section 5.3 of the St. Lucie Unit 2 Final Safety Analysis Report by incorporating the newly developed curve.

If additional information is required on this topic, please contact us.

Very truly yours,

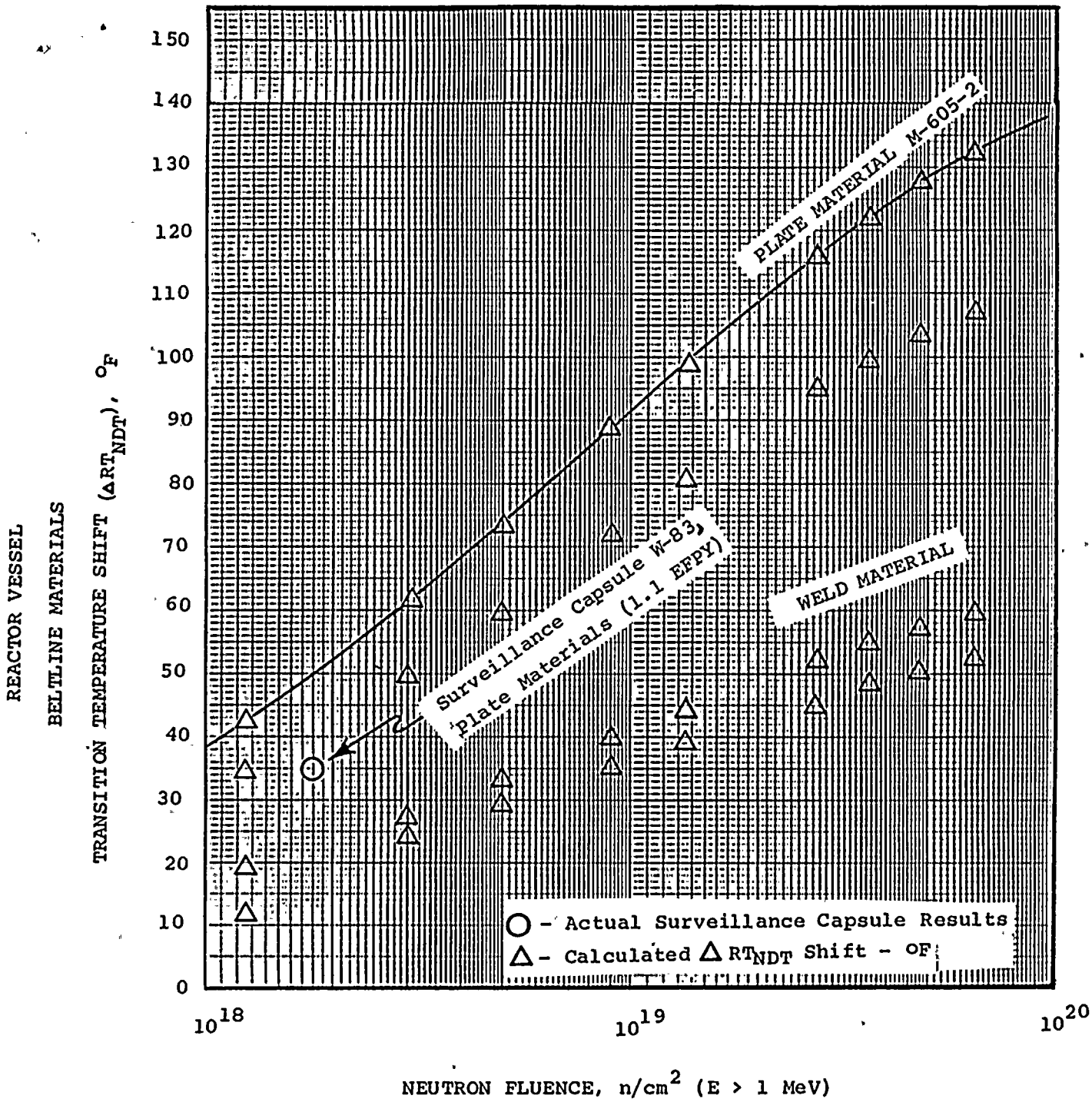
H. N. Paduano Jr.
for C. O. Woody
Group Vice President
Nuclear Energy

COW/EJW/gp

Attachment

cc: Dr. J. Nelson Grace, Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, St. Lucie Plant

EJW4/028/2



ST. LUCIE UNIT 2

Reference Temperature (RT_{NDT}) Increases as a function of fast (E > 1 MeV) neutron fluence (550°F irradiation)