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10 CFR 50.90
10 CFR 50, Appendix H

September 14, 2001

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

Subject: License Amendment Request LG 01-00909
Extended Use of Pressure-Temperature Limits and Deferral of Withdrawal of Vessel Surveillance Specimens

Limerick Generating Station, Unit 1
Facility Operating License No. NPF-39
NRC Docket No. 50-352

References:

1. Letter from U. S. NRC to J. A. Hutton, PECO Energy Company (now Exelon Generation Company, LLC), "Limerick Generating Station, Unit 1 – Issuance of Amendment – Re: Update Pressure-Temperature (P-T) Limit Curves," dated September 15, 2000.

2. Letter from J. F. Klapproth (General Electric Company) to U. S. NRC, "Submittal of GE Proprietary Document NEDC-32983P, 'Licensing Topical Report, General Electric Methodology for Reactor Pressure Vessel Fast Neutron Flux Evaluations,'" dated September 1, 2000.

3. Letter from J. A. Hutton, PECO Energy Company (now Exelon Generation Company, LLC), "Changes to Reactor Pressure Vessel Pressure – Temperature Limits Supplemental Information, " dated August 10, 2000.

4. Letter from U. S. NRC to G. D. Edwards, PECO Energy Company (now Exelon Generation Company, LLC), "Limerick Generating Station, Unit 1," Issuance of Amendment – Change Reactor Vessel Material Surveillance Program Withdrawal Schedule, dated April 15, 1998.

5. Letter from Jack R. Strosnider (NRC) to Carl Terry (BWRVIP Chairman), "BWR Integrated Surveillance Program (BWRVIP-78)," dated May 16, 2000.

Extended Use of Pressure-Temperature Limits

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," Exelon Generation Company (EGC), LLC, requests a change to Facility Operating License No. NPF-39 for Limerick Generating Station (LGS), Unit 1. The request extends the use of the pressure-temperature limits specified in Technical Specification Figure 3.4.6.1-1,

A001

"Minimum Reactor Vessel Metal Temperature vs. Reactor Vessel Pressure," through Cycle 10 of operation, currently scheduled to end in April 2004.

Deferral of Withdrawal of Vessel Surveillance Specimens

In accordance with 10 CFR 50.90, EGC requests a change to Facility Operating License No. NPF-39 for LGS, Unit 1. The request adds a note to TS Table 4.4.6.1.3-1, "Reactor Vessel Material Surveillance Program – Withdrawal Schedule." The note clarifies that the surveillance capsule withdrawals are to be scheduled for the nearest vessel refueling outage date subsequent to the withdrawal time specified in the TS Table.

We request approval of these proposed changes prior to February 15, 2002, in order to support preparation for the ninth LGS Unit 1 refueling outage.

The following attachments to this letter provide information supporting these proposed changes.

1. Attachment A provides a description and safety analysis of the proposed changes.
2. Attachment B includes the marked–up technical specifications pages with the proposed changes indicated.
3. Attachment C includes the camera ready technical specification pages with the proposed changes included.
4. Attachment D describes our evaluation performed in accordance with the requirements of 10 CFR 50.91(a)(1) that supports a finding of no significant hazards consideration using the standards in 10 CFR 50.92(c).
5. Attachment E provides information supporting an Environmental Assessment.

The proposed changes have been reviewed by the LGS Plant Operations Review Committee and approved by the Nuclear Safety Review Board.

Should you have any questions concerning this request, please contact Glenn Stewart at 610-765-5529.

I declare under penalty of perjury that the foregoing is true and correct.

Respectfully,

Executed on 09-14-01 Michael P. Gallagher

M. P. Gallagher
Director, Licensing & Regulatory Affairs
Mid-Atlantic Regional Operating Group

Attachments:
Attachment A: Description and Safety Analysis for Proposed Changes
Attachment B: Technical Specifications Mark-ups
Attachment C: Technical Specifications Camera Ready Pages

Attachment D: Information Supporting a Finding of No Significant Hazards Consideration
Attachment E: Information Supporting an Environmental Assessment

cc: H. J. Miller, Administrator, Region I, USNRC
A. L. Burritt, USNRC Senior Resident Inspector, LGS
C. Gratton, Senior Project Manager, USNRC
R. R. Janati - Commonwealth of Pennsylvania

Attachment A
Request for License Amendment for Pressure-Temperature Limits and Deferral of Withdrawal of Vessel Surveillance Specimens Limerick Generating Station, Unit 1

Description and Safety Analysis for Proposed Changes

A. SUMMARY OF PROPOSED CHANGES

Extended Use of Pressure-Temperature Limits

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," Exelon Generation Company (EGC), LLC, requests a change to Facility Operating License No. NPF-39 for Limerick Generating Station (LGS), Unit 1. The request extends the use of the pressure-temperature limits specified in Technical Specification Figure 3.4.6.1-1, "Minimum Reactor Vessel Metal Temperature vs. Reactor Vessel Pressure," through Cycle 10 of operation, currently scheduled to end in April 2004.

In Reference 1, the NRC approved a revision to the Technical Specifications (TS) for LGS, Unit 1, regarding the pressure-temperature (P-T) limits for the reactor vessel. The LGS Unit 1 P-T limits were subject to a note approving their use through Cycle 9 of operation which is currently scheduled to end in March 2002.

In Reference 2, General Electric (GE) Company submitted a licensing topical report (LTR) to the NRC describing a proposed methodology for calculating reactor vessel fast neutron fluence. This GE LTR is currently undergoing NRC review. EGC had planned to use the GE LTR results to support removal of the note in TS Figure 3.4.6.1-1.

Because the GE LTR methodology is currently being reviewed by the NRC, EGC requests that the LGS Unit 1 TS Figure 3.4.6.1-1 note be modified to allow use of the current P-T limits through Cycle 10 of operation, currently scheduled to end in April 2004.

Deferral of Withdrawal of Vessel Surveillance Specimens

In accordance with 10 CFR 50.90, EGC requests a change to Facility Operating License No. NPF-39 for LGS, Unit 1. The request adds a note to TS Table 4.4.6.1.3-1, "Reactor Vessel Material Surveillance Program – Withdrawal Schedule." The note clarifies that the surveillance capsule withdrawals are to be scheduled for the nearest vessel refueling outage date subsequent to the withdrawal time specified in the TS Table.

As stated in U. S. NRC Administrative Letter 97-04, "NRC Staff Approval for Changes to 10 CFR Part 50, Appendix H, Reactor Vessel Surveillance Specimen Withdrawal Schedules," dated September 30, 1997, changes to a reactor vessel surveillance specimen capsule withdrawal schedule that do not conform to the required ASTM standard referenced in Appendix H to 10 CFR 50 will be treated as license amendments requiring public notice and opportunity for hearing. Information to justify a license amendment is provided herein in order to facilitate a timely review and approval.

The current LGS Unit 1 TS withdrawal time for the first surveillance capsule is 15 effective full power years (EFPY). The clarifying note on implementation is derived from the 1982 Edition of the American Society for Testing and Materials, E 185, "Standard Practice for Conducting Surveillance Tests for Light Water Cooled Nuclear Power Reactor Vessels," (ASTM E 185-

82). This change will permit scheduling the withdrawal of the LGS Unit 1 first surveillance capsule during the tenth vessel refueling outage scheduled for spring 2004, when the predicted exposure to the vessel is 15.34 EFPY, in lieu of withdrawing the surveillance capsule during the ninth vessel refueling outage scheduled for spring 2002, when the predicted exposure to the vessel is only 13.45 EFPY.

EGC, as an active participant in the Boiling Water Reactor Vessel and Internals Project (BWRVIP) intends to participate in the Integrated Surveillance Program (ISP) as described in BWRVIP-78. In Reference 5, the NRC provided the criteria for a one cycle deferral of the withdrawal of vessel specimens in order to provide time for the NRC review and approval of the ISP. LGS Unit 1 meets the criteria in Reference 5 as described in this attachment.

B. DESCRIPTION OF THE CURRENT REQUIREMENTS

Extended Use of Pressure-Temperature Limits

The note on LGS Unit 1 TS Figure 3.4.6.1-1 states: "In accordance with NRC Safety Evaluation supporting Amendment No. 145, this Figure is valid through Cycle 9 operation, currently scheduled to end in April 2002."

Deferral of Withdrawal of Vessel Surveillance Specimens

The LGS Unit 1 TS Table 4.4.6.1.3-1 approved schedule indicates that the first surveillance capsule will be withdrawn before an exposure of 15 EFPY on the vessel.

C. BASES FOR THE CURRENT REQUIREMENTS

Extended Use of Pressure-Temperature Limits

The current TS P-T limits were approved by the NRC for use at LGS in Amendment No. 145 in Reference 1. The NRC Safety Evaluation (SE) accompanying the approval in Reference 1 noted that the P-T limit curves were based on neutron fluence projections for LGS effective to 32 effective full power years (EFPY). The SE further noted that the neutron fluence values were developed by extrapolation from fluence values used for the current (at the time of amendment issuance) P-T curves. The NRC review identified concerns with the lack of plant-specific dosimetry and calculations, and that the original fluence value was deduced from averaging similar plant dosimetry and one dimensional calculations. Because of the difficulty in resolving the NRC concerns, PECO Energy Company (now Exelon Generation Company, LLC) proposed in Reference 3 that the NRC grant interim approval of the 32 EFPY P-T limits, while new fluence calculations were completed. This interim approval was granted in Reference 1.

Deferral of Withdrawal of Vessel Surveillance Specimens

The current TS surveillance capsule withdrawal times were approved by the NRC for use at LGS in Amendment No. 126 in Reference 4. The LGS Unit 1 TS Table 4.4.6.1.3-1 withdrawal

time for the first surveillance capsule was changed from 10 EFPY to 15 EFPY so that upon testing of the surveillance specimens the measured shift in reference nil-ductility temperature (RT_{NDT}) would be large enough to be differentiated from the data scatter from tests of unirradiated material, thus making the data from tests of the irradiated material useful in predicting vessel material behavior. For the LGS Unit 1 surveillance capsule withdrawal time, a criteria of 75% of the expected shift in RT_{NDT} was established. The surveillance capsule will experience this shift for the limiting LGS Unit 1 vessel material (plate) at approximately 15 EFPY.

D. NEED FOR REVISION OF THE REQUIREMENTS

Extended Use of Pressure-Temperature Limits

EGC had planned to use the GE LTR methodology of Reference 2 to support removal of the TS Figure 3.4.6.1-1 note. The GE LTR methodology is currently being reviewed by the NRC. The requested change to the TS Figure note is needed to avoid being restricted from startup of LGS, Unit 1, following the ninth refueling outage currently scheduled to end in March, 2002.

Deferral of Withdrawal of Vessel Surveillance Specimens

The proposed change will allow LGS to benefit from participation in the BWRVIP ISP which is currently under review by the NRC. As indicated in BWRVIP-78, the involvement of LGS in the ISP will preclude LGS from withdrawing any surveillance capsules or performing tests on the surveillance samples therein. The benefits are:

1. Reduced outage work and associated dose for specimen removal in the upcoming ninth refueling outage, and
2. Cost savings of approximately $500,000 for each surveillance capsule withdrawal, specimen testing and analyses, report preparation, and NRC review.

Without NRC approval of this proposed change, LGS will be required to either: (1) withdraw the vessel surveillance capsule in the upcoming ninth refueling outage currently scheduled to begin March, 2002, or (2) shut down Unit 1 and withdraw the vessel surveillance capsule during the tenth operating cycle when the reactor vessel exposure reaches 15 EFPY. The early withdrawal during the ninth refueling outage corresponds to a projected vessel exposure of 13.45 EFPY. This is a much lower exposure than the current target exposure when 75% of the shift in RT_{NDT} is predicted. This is significant because test results from higher exposure specimens will provide more credible results.

E. DESCRIPTION OF THE PROPOSED CHANGES

Extended Use of Pressure-Temperature Limits

The LGS Unit 1 TS Figure 3.4.6.1-1 is proposed to read, "In accordance with NRC Safety Evaluation supporting Amendment No.___, this Figure is valid through Cycle 10 operation, currently scheduled to end in April 2004."

Deferral of Withdrawal of Vessel Surveillance Specimens

The proposed change defers withdrawal of the vessel surveillance specimens which would increase the vessel exposure limit to 15.34 EFPY. A clarifying note that was derived from ASTM E 185-82 will be added to TS Table 4.4.6.1.3-1 and is proposed to read, "If the designated withdrawal time (EFPY) is reached during an operating cycle, withdrawal of the capsule may be deferred until the next scheduled refueling outage."

F. SAFETY ANALYSIS OF THE PROPOSED CHANGES

Extended Use of Pressure-Temperature Limits

The proposed use of the P-T limits is through Cycle 10 of operation, which is currently scheduled to end in April 2004. The maximum reactor vessel operating times attained at the end of the proposed period is predicted to be 15.34 EFPY. This operating time represents a maximum of 48.1% of the 32 EFPY period assumed in the current P-T limits. The reactor vessel operating time at the end of Cycle 10 provides significant margin to ensure that the current 32 EFPY fluence projection of 1.3×10^{18} n/cm^2 at the reactor vessel 1/4T will not be exceeded.

A new plant specific calculation of reactor vessel 32 EFPY fast neutron fluence has been completed for LGS, Unit 1, using the GE LTR methodology of Reference 2. The methods used to determine neutron flux, in general, meet the intent of Regulatory Guide 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence." The three-dimensional spatial distribution of neutron flux was modeled by combining the results of two separate two-dimensional neutron transport calculations. The latest available cross section libraries for the important components of BWR neutron flux calculations, i.e., oxygen, hydrogen and individual iron isotopes, were included. The resulting reactor vessel fast neutron fluence values are significantly lower than the values in the LGS Unit 1 current licensing basis. The new 32 EFPY P-T limit curves are conservatively bounded by the fast neutron fluence values in the current licensing basis. This provides sufficient assurance that the LGS Unit 1 reactor vessel will be operated in a manner that will protect it from brittle fracture.

Deferral of Withdrawal of Vessel Surveillance Specimens

In Reference 5, the NRC provided guidance to Boiling Water Reactor (BWR) licensees seeking deferral of reactor vessel surveillance capsule withdrawals and/or deferral of surveillance specimen testing so that licensees could support the BWRVIP ISP (i.e., BWRVIP-78) or defer testing which may not be required under the proposed ISP. One cycle capsule deferrals may be approved provided that there is adequate technical basis that the integrity of the reactor vessel will be maintained during the period of the deferral. Deferral is expected to be sufficient to permit the NRC staff adequate time to complete its review of BWRVIP-78.

Attachment A
Request for License Amendment for Pressure-Temperature Limits and Deferral of Withdrawal of Vessel Surveillance Specimens Limerick Generating Station, Unit 1

Description and Safety Analysis for Proposed Changes

Reference 5 states that deferral requests should address three criteria. The evaluation of how LGS Unit 1 meets the criteria is provided below.

1. The first NRC criterion is to demonstrate how the deferral is consistent with the ISP plan submitted in BWRVIP-78.

   Based on the selection criteria in the BWRVIP-78 ISP plan, e.g., chemistry match, baseline data, and fabrication details, the BWRVIP did not select LGS Unit 1 capsules for analysis. Instead of analyzing LGS Unit 1 specimens, EGC will characterize LGS Unit 1 reactor vessel material by using the results from the analysis of applicable specimens in the River Bend Station reactor for the limiting weld metal heat and Peach Bottom Atomic Power Station (PBAPS), Unit 2, reactor for the limiting plate heat. Therefore, in accordance with BWRVIP-78, no LGS Unit 1 capsules will require withdrawal during the LGS Unit 1 operating license period. LGS Unit 1 will use the test results from applicable River Bend Station (weld metal) and PBAPS, Unit 2, (plate) surveillance specimens in order to be consistent with the BWRVIP ISP.

2. The second NRC criterion is to explain how the acquisition of materials property data in accordance with the facility's plant-specific Appendix H program is not necessary at this time to ensure that the integrity of the facility reactor vessel will be maintained through the period of deferral.

   Currently, the LGS Unit 1 TS contain P-T limit curves applicable for up to 32 EFPY. The LGS Unit 1 vessel is predicted to be at 13.45 EFPY at the end of the ninth operating cycle in March 2002 and 15.34 EFPY at the end of the tenth operating cycle in April 2004. No capsule removal is required to support these P-T limit curves in the next two operating cycles.

   The data from the surveillance specimen tests is not expected to provide Charpy shift values above 56°F for welds and 34°F for plates. These are the threshold values for the data to be distinguishable from the scatter in the Charpy test method based on Equation 2 in Regulatory Guide 1.99, Revision 2, "Radiation Embrittlement of Reactor Vessel Materials." In order to address this issue and make the data from tests of the irradiated specimens useful in predicting vessel material behavior, the current LGS Unit 1 Appendix H program has a target exposure of 15 EFPY when 75% of the expected shift in RT_{NDT} for the limiting LGS Unit 1 vessel material (plate) is predicted to occur. Additional exposure will only serve to provide more credible test results.

   The proposed change to the withdrawal schedule for the vessel surveillance capsules postpones the collection of data from the surveillance specimens that may be used to change the P-T curves. However, since there is an insufficient number of data points, i.e., less than 2, no change to the current P-T curves using RG 1.99, Revision 2, Position 2, "Surveillance Data Available" methodology for plant-specific changes to embrittlement correlations is allowed. The P-T curves that are in the TS will continue to be based on RG 1.99, Revision 2, Position 1, "Surveillance Data Not Available." Because the basis for the P-T curves is maintained, this proposed change does not impact or increase the assumed

radionuclide source term and will not result in an unacceptable reduction in reactor vessel toughness.

Accordingly, no capsule removal is required to evaluate material properties in order to support the P-T limit curves and the ability to monitor reactor vessel embrittlement will not be significantly affected by a one cycle deferral.

3. The third NRC criterion is to explain how deferral of the acquisition of dosimetry data from the capsule to be tested does not affect the validity of the facility's reactor vessel integrity assessments through the period of deferral.

   The LGS Unit 1 vessel exposure will be 13.45 EFPY at the end of the current operating cycle, and the vessel exposure at the end of the following (tenth) operating cycle is projected to be less than 15.34 EFPY. Since the vessel exposure calculations have not been benchmarked based on analysis of dosimetry specimens in the first refueling outage, the conservative fluence values in the LGS Unit 1 current licensing basis were used to generate the new 32 EFPY P-T limit curves. These conservative fluence values are expected to bound the actual fluence.

   A new plant specific calculation of reactor vessel 32 EFPY fast neutron fluence has been completed for LGS, Unit 1, using the GE LTR methodology of Reference 2. The methods used to determine neutron flux, in general, meet the intent of Regulatory Guide 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence." The three-dimensional spatial distribution of neutron flux was modeled by combining the results of two separate two-dimensional neutron transport calculations. The latest available cross section libraries for the important components of BWR neutron flux calculations, i.e., oxygen, hydrogen and individual iron isotopes, were included. The resulting reactor vessel fast neutron fluence values are significantly lower than the values in the LGS Unit 1 current licensing basis. The new 32 EFPY P-T limit curves are conservatively bounded by the fast neutron fluence values in the current licensing basis. This provides sufficient assurance that the LGS Unit 1 reactor vessel will be operated in a manner that will protect it from brittle fracture.

In summary, regarding the three NRC criteria in Reference 5, the proposed deferral of the reactor vessel material surveillance capsule withdrawal is considered acceptable because it is consistent with the proposed BWR ISP, it will not delay data needed to support existing vessel evaluation requirements, and it will not affect the reactor vessel integrity assessment during the deferral period.

G. IMPACT ON PREVIOUS SUBMITTALS

EGC has reviewed the proposed changes regarding their impact on any previous submittals. The proposed changes do not impact any changes proposed in any previous submittals.

Description and Safety Analysis for Proposed Changes

H. SCHEDULE REQUIREMENTS

EGC requests approval of the proposed changes by February 15, 2002, to support preparation for the ninth refueling outage and startup with the revised TS Figure 3.4.6.1-1 note from the ninth Unit 1 refueling outage, currently scheduled to end in March, 2002.

I. REFERENCES

Extended Use of Pressure-Temperature Limits

1. Letter from U. S. NRC to J. A. Hutton, PECO Energy Company (now Exelon Generation Company, LLC), "Limerick Generating Station, Unit 1 – Issuance of Amendment – Re: Update Pressure-Temperature (P-T) Limit Curves," dated September 15, 2000

2. Letter from J. F. Klapproth (General Electric Company) to U. S. NRC, "Submittal of GE Proprietary Document NEDC-32983P, 'Licensing Topical Report, General Electric Methodology for Reactor Pressure Vessel Fast Neutron Flux Evaluations,'" dated September 1, 2000

3. Letter from J. A. Hutton, PECO Energy Company (now Exelon Generation Company, LLC), "Changes to Reactor Pressure Vessel Pressure – Temperature Limits Supplemental Information, " dated August 10, 2000.

Deferral of Withdrawal of Vessel Surveillance Specimens

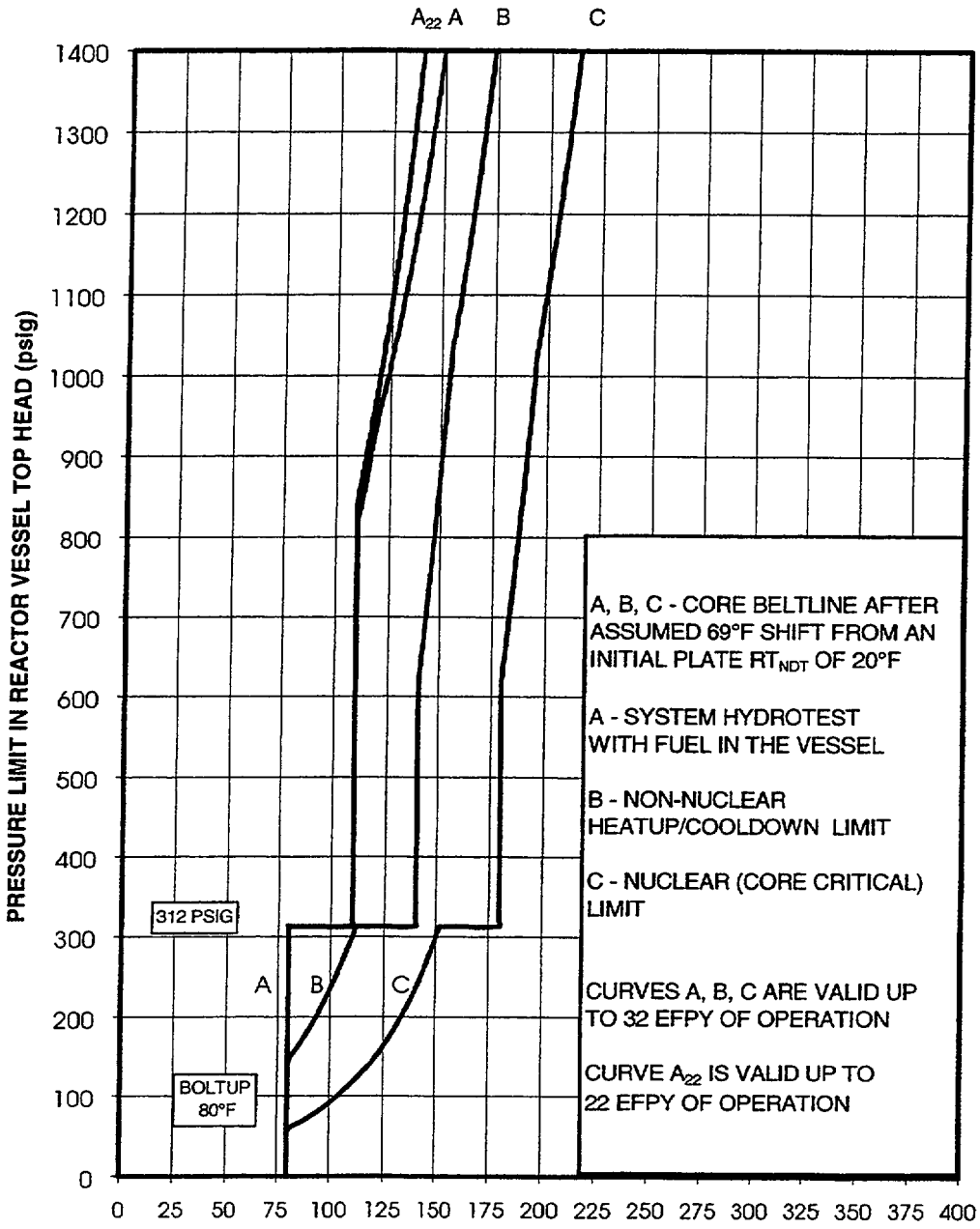
4. Letter from U. S. NRC to G. D. Edwards, PECO Energy Company (now Exelon Generation Company, LLC), "Limerick Generating Station, Unit 1" Issuance of Amendment – Change Reactor Vessel Material Surveillance Program Withdrawal Schedule, dated April 15, 1998.

5. Letter from Jack R. Strosnider (NRC) to Carl Terry (BWRVIP Chairman), "BWR Integrated Surveillance Program (BWRVIP-78)," dated May 16, 2000.

Attachment B
Request for License Amendment for Pressure-Temperature Limits and Deferral of Withdrawal of Vessel Surveillance Specimens
Limerick Generating Station, Unit 1

Marked Up Pages

REVISED PAGES
Technical Specifications Page 3/4 4-20
Technical Specifications Page 3/4 4-21



Note: In accordance with NRC Safety Evaluation supporting Amendment No. ~~145~~ 2, this Figure is valid through Cycle ~~8~~ 10 Operation, currently scheduled to end in April 2002. 14

MINIMUM REACTOR VESSEL METAL TEMPERATURE VS. REACTOR VESSEL PRESSURE
FIGURE 3.4.6.1-1

TABLE 4.4.6.1.3-1

REACTOR VESSEL MATERIAL SURVEILLANCE PROGRAM-WITHDRAWAL SCHEDULE

CAPSULE NUMBER	VESSEL LOCATION	LEAD FACTOR*	WITHDRAWAL TIME (EFPY) **
117C 4944 G004	30°	1.20	15
117C 4944 G001	120°	1.20	30
117C 4944 G001	300°	1.20	Spare

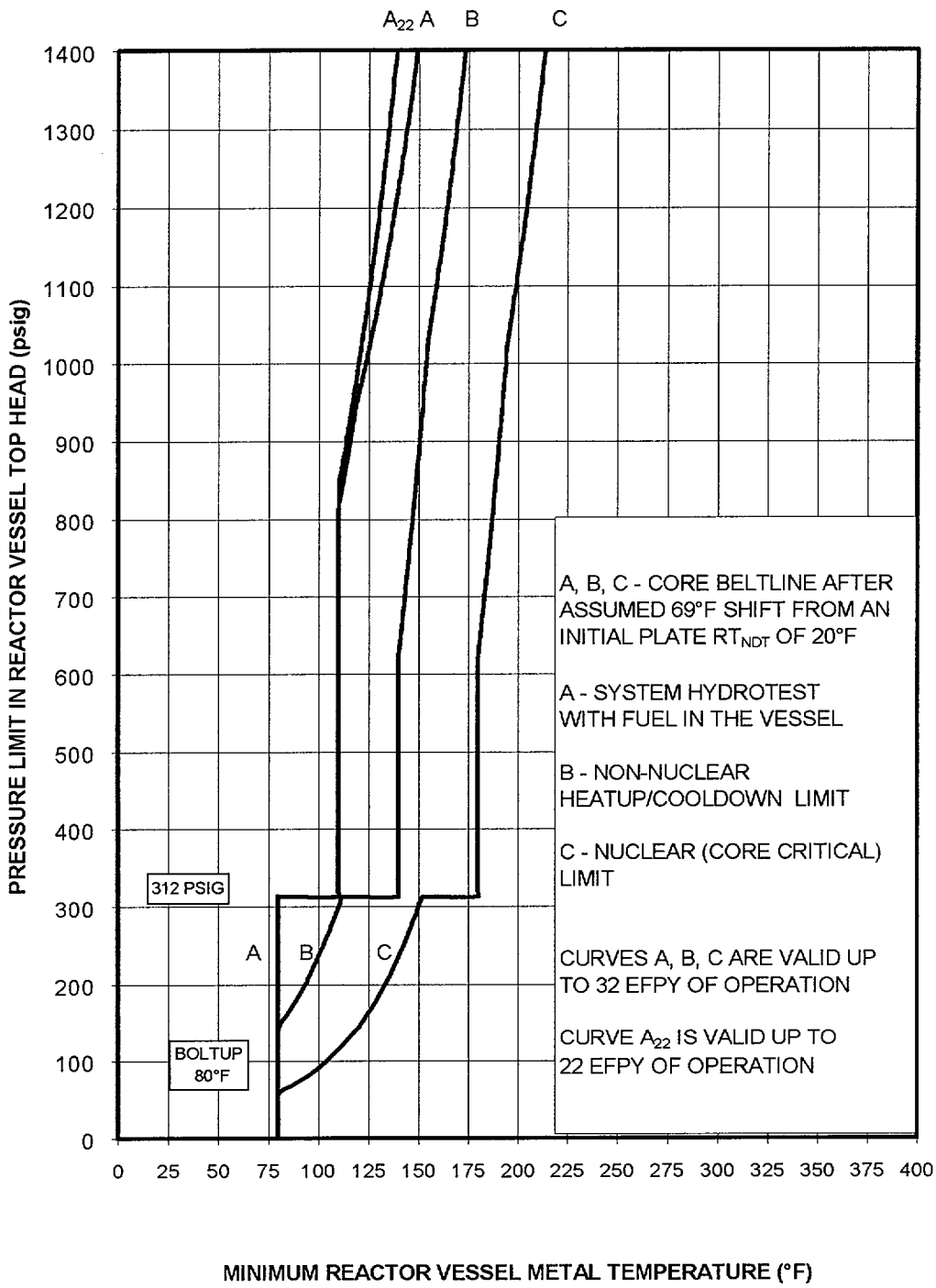
*At 1/4 T.

** If the designated withdrawal time (EFPY) is reached during an operating cycle, withdrawal of the capsule may be deferred until the next scheduled refueling outage.

Attachment C
Request for License Amendment for Pressure-Temperature Limits and Deferral of Withdrawal of Vessel Surveillance Specimens
Limerick Generating Station, Unit 1

Camera Ready Pages

REVISED PAGES
Technical Specifications Page 3/4 4-20
Technical Specifications Page 3/4 4-21



Note: In accordance with NRC Safety Evaluation supporting Amendment No. ____, this Figure is valid through Cycle 10 Operation, currently scheduled to end in April 2004.

MINIMUM REACTOR VESSEL METAL TEMPERATURE VS. REACTOR VESSEL PRESSURE
FIGURE 3.4.6.1-1

TABLE 4.4.6.1.3-1

REACTOR VESSEL MATERIAL SURVEILLANCE PROGRAM-WITHDRAWAL SCHEDULE

CAPSULE NUMBER	VESSEL LOCATION	LEAD FACTOR*	WITHDRAWAL TIME** (EFPY)
117C 4944 G004	30°	1.20	15
117C 4944 G001	120°	1.20	30
117C 4944 G001	300°	1.20	Spare

*At 1/4 T.

**If the designated withdrawal time (EFPY) is reached during an operating cycle, withdrawal of the capsule may be deferred until the next scheduled refueling outage.

Attachment D
Request for License Amendment for Pressure-Temperature Limits and Deferral of Withdrawal of Vessel Surveillance Specimens Limerick Generating Station, Unit 1

Information Supporting a Finding of No Significant Hazards Consideration

According to 10 CFR 50.92(c), "Issuance of amendment," a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not:

(1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or,

(2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or,

(3) Involve a significant reduction in a margin of safety.

Extended Use of Pressure-Temperature Limits

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," Exelon Generation Company (EGC), LLC, requests a change to Facility Operating License No. NPF-39 for Limerick Generating Station (LGS), Unit 1. The request extends the use of the pressure-temperature (P-T) limits specified in Technical Specification Figure 3.4.6.1-1, "Minimum Reactor Vessel Metal Temperature vs. Reactor Vessel Pressure," through Cycle 10 of operation, currently scheduled to end in April 2004.

Deferral of Withdrawal of Vessel Surveillance Specimens

In accordance with 10 CFR 50.90, EGC requests a change to Facility Operating License No. NPF-39 for LGS, Unit 1. The request adds a note to TS Table 4.4.6.1.3-1, "Reactor Vessel Material Surveillance Program – Withdrawal Schedule." The note clarifies that the surveillance capsule withdrawals are to be scheduled for the nearest vessel refueling outage date subsequent to the withdrawal time specified in the TS Table.

Information supporting the determination that the criteria set forth in 10 CFR 50.92 are met for this amendment request is indicated below.

Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Extended Use of Pressure-Temperature Limits

The proposed change to the technical specifications to extend the use of the P-T limits does not affect the operation or configuration of any plant equipment. Thus, no new accident initiators are created by this change. The proposed change extends the use of the pressure – temperature (P-T) limits for an additional cycle of operation. The P-T limits are based on the projected reactor vessel neutron fluence at 32 effective full power years (EFPY) of operation. At the end of the next cycle of operation, Limerick Generating Station (LGS), Unit 1 will have attained a maximum of 48.1% of the 32 EFPY operating times which provides significant margin to ensure that the current 32 EFPY fluence projection will not be exceeded. This ensures that the basis for proposed applicability of

the P-T limits is conservative and that the reactor vessel integrity is protected under all operating conditions. Therefore, neither the probability nor the consequences of an accident are increased.

Deferral of Withdrawal of Vessel Surveillance Specimens

The proposed change to the withdrawal schedule for the vessel surveillance capsules was derived from the 1982 Edition of the American Society for Testing and Materials, E 185, "Standard Practice for Conducting Surveillance Tests for Light Water Cooled Nuclear Power Reactor Vessels," (ASTM E 185-82) which has been endorsed in Appendix H to 10CFR Part 50, "Reactor Vessel Material Surveillance Program Requirements."

The deferral of the withdrawals of the vessel surveillance capsules are not initiators of or precursors to any of the accident scenarios presented in the UFSAR. This schedular adjustment will not increase the likelihood of equipment failure, will not defeat the design reactor protection functions, and will not increase the likelihood of failure of any plant structure, system or component. Data from tests of the vessel surveillance specimens are used as the basis for the P-T limits. However, despite the deferral of withdrawal of the vessel surveillance specimens, the P-T curves will continue to conservatively be established in accordance with RG 1.99, Revision 2 as described in the UFSAR. This change does not involve an increase in the probability of any accident previously evaluated.

The proposed change to the withdrawal schedule for the vessel surveillance capsules postpones the collection of data from the surveillance specimens that may be used to change the P-T curves. However, since there is an insufficient number of data points, i.e., less than 2, no change to the current P-T curves using RG 1.99, Revision 2, Position 2, "Surveillance Data Available" methodology for plant-specific changes to embrittlement correlations is allowed. The P-T curves that are in the TS will continue to be based on RG 1.99, Revision 2, Position 1, "Surveillance Data Not Available." Because the basis for the P-T curves is maintained, this proposed change does not impact or increase the assumed radionuclide source term and will not result in an unacceptable reduction in reactor vessel toughness.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Extended Use of Pressure-Temperature Limits

The proposed change to the technical specifications to extend the use of the P-T limits does not affect the operation or configuration of any plant equipment. The current P-T

limits will remain valid and conservative during the proposed extension. Thus, no new or different accidents are created by this proposed change.

Deferral of Withdrawal of Vessel Surveillance Specimens

The proposed deferral of the removal of the vessel surveillance capsule does not involve a change to the plant design or operation. No new equipment will be installed or utilized, and no new operating conditions will be initiated as a result of this change. Because the P-T limit curves are not impacted, the safety function of the reactor vessel to mitigate the release of radioactive steam and limit reactor inventory loss under normal, accident, and transient conditions is not affected.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any previously evaluated.

Does the proposed change involve a significant reduction in a margin of safety?

Extended Use of Pressure-Temperature Limits

The proposed change extends the use of the P-T limits for an additional cycle of operation. The P-T limits are based on the projected reactor vessel neutron fluence at 32 EFPY of operation. At the end of the next cycle of operation, LGS Unit 1will have attained a maximum of 48.1% of the 32 EFPY operating times which provides significant margin to ensure that the current 32 EFPY fluence projection will not be exceeded. This ensures that the basis for the P-T limits is conservative and therefore ensures that the reactor pressure vessel integrity is protected under all operating conditions. Therefore, the proposed change does not involve a significant reduction in the margin of safety.

Deferral of Withdrawal of Vessel Surveillance Specimens

The deferral of the withdrawal of the vessel surveillance capsule does not affect the P-T limit curves, and therefore does not affect the margin to safety for brittle fracture. Because RG 1.99, Revision 2, Position 2, "Surveillance Data Available" methodology for plant-specific changes to embrittlement correlations requires the data from tests of at least two sets of surveillance specimens, the P-T limit curves that are in the TS will continue to be based on RG 1.99, Revision 2, Position 1, "Surveillance Data Not Available." The proposed change does not challenge the integrity of the fuel cladding, reactor coolant pressure boundary that includes the reactor pressure vessel, or the primary containment.

Based upon the above evaluation, EGC has concluded that these changes involve no significant hazards consideration.

Attachment E
Request for License Amendment for Pressure-Temperature Limits and Deferral of Withdrawal of Vessel Surveillance Specimens Limerick Generating Station, Unit 1

Information Supporting an Environmental Assessment

Exelon Generation Company (EGC), LLC, has evaluated this proposed change against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21,"Criteria for and identification of licensing and regulatory actions requiring environmental assessment." EGC has determined that the proposed changes meet the criteria for a categorical exclusion set forth in 10 CFR 51.22(c)(9), "Criteria for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review," and as such, has determined that no irreversible consequences exist in accordance with 10 CFR 50.92(b), "Issuance of amendment." This determination is based on the fact that the changes are being proposed as an amendment to a license issued pursuant to 10 CFR 50, "Domestic Licensing of Production and Utilization Facilities," which changes a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, "Standards for Protection Against Radiation," or that changes an inspection or a surveillance requirement, and the amendment meets the following specific criteria.

(i) The amendment involves no significant hazards consideration.

As demonstrated in Attachment D, the proposed changes do not involve any significant hazards consideration.

(ii) There is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite.

The proposed changes extend the use of the current pressure-temperature limit curves and defers the withdrawal of the vessel surveillance specimens. These changes are consistent with the design basis of the plant. There will be no increase in the amounts of any effluents released offsite as a result of the proposed changes. These changes do not allow for an increase in the unit power level, does not increase the production, nor alter the flow path or method of disposal of radioactive waste or byproducts. Therefore, the proposed change does not affect actual unit effluents.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed changes will not result in changes in the operation or configuration of the facility. There will be no change in the level of controls or methodology used for processing of radioactive effluents or handling of solid radioactive waste, nor will the proposal result in any change in the normal radiation levels within the plant. Therefore, there will be no increase in individual or cumulative occupational radiation exposure resulting from this change.