



PECO ENERGY

PECO Energy Company
Nuclear Group Headquarters
965 Chesterbrook Boulevard
Wayne, PA 19087-5691

September 27, 1995

Docket Nos. 50-277
50-278

License Nos. DPR-44
DPR-56

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

Subject: Peach Bottom Atomic Power Station, Units 2 and 3
Submittal of Additional Information Concerning the Proposed Alternative Repair
Plan In Accordance with 10 CFR 50.55a(a)(3)

- References:
1. Letter from G. A. Hunger, Jr. (PECO Energy Company) to U. S. Nuclear Regulatory Commission (USNRC), dated September 16, 1994
 2. Letter from G. A. Hunger, Jr. (PECO Energy Company) to USNRC, dated September 26, 1994
 3. Letter from G. A. Hunger, Jr. (PECO Energy Company) to USNRC, dated February 14, 1995
 4. Letter from G. A. Hunger, Jr. (PECO Energy Company) to USNRC, dated June 22, 1995
 5. Letter from J. W. Shea (USNRC) to G. A. Hunger, Jr. (PECO Energy Company), dated July 27, 1995
 6. Letter from G. A. Hunger, Jr. (PECO Energy Company) to USNRC, dated August 17, 1995
 7. Letter from G. A. Hunger, Jr. (PECO Energy Company) to USNRC, dated August 28, 1995
 8. Letter from G. A. Hunger, Jr. (PECO Energy Company) to USNRC, dated September 5, 1995
 9. Letter from G. A. Hunger, Jr. (PECO Energy Company) to USNRC, dated September 19, 1995

040066

Dear Sir:

In the above Referenced letters, information was exchanged regarding the approval of a proposed repair plan for the Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3 core shroud, in accordance with 10 CFR 50.55a(a)(3), in the event that such a repair is determined to be necessary.

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The following is a reiteration of our responses to additional questions that were discussed in a conference call between PECO Energy Company, the U. S. Nuclear Regulatory Commission (USNRC), and General Electric Company on September 26, 1995 concerning the pre-installation inspections of the proposed repair:

Question 1:

Confirm the length of the H-9 weld to be inspected prior to installation of the shroud repair.

Answer:

A VT-1 inspection of the H-9 weld adjacent to the repair installation will be performed. The inspection length is anticipated to be a minimum of 13.5 inches, but is dependent on accessibility. Field Disposition Instruction HE3-0183-71067-1 (Attachment 1) has been revised to indicate this pre-installation inspection.

Question 2:

Provide justification for not performing exams of the segment welds of the core shroud support plate prior to installation of the shroud repair.

Answer:

There are eight shroud support plate segment welds. The segment welds are approximately 98 inches apart. The lower repair attachments to the shroud support plates are located at the midpoints between the segment weld, or about 49 inches from the weld. The repair attachment is approximately 4 1/2 inches from the vessel wall. The stress analysis for vertical loading of the repair indicates that practically all vertical loading is transferred to the vessel through the H-9 weld. Therefore, due to the dimensional configuration, no additional loading of the segment welds is expected. The analysis of the support plate also indicates that the loaded area does not reach the segment welds. Accordingly, the inspection of the these welds is not recommended as a part of the pre-installation repair inspections.

Question 3:

Table 1 of GENE-523-A062-0695, Revision 1 ("Peach Bottom 2, 3 Shroud Vertical Seam Weld Evaluation") assumes a crack growth based on one cycle of operation. However, the inspection plan states that the shroud will be inspected every three years, or two cycles, whichever is greater. Please resolve this discrepancy.

Answer:

Table 1 of GENE-523-A062-0695, Revision 1 has been revised to use the assumed crack growth length for two cycles, as shown in Attachment 2. In addition, this revision increased the inspection length of the vertical welds to 14 inches.

Question 4:

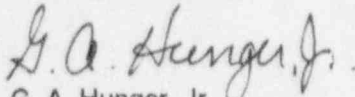
Discuss which methods will be used for the examination of the vertical seam welds prior to the installation of the shroud repair.

Answer:

PECO Energy will utilize either UT examinations or visual examinations (VT) in the inspection of the vertical seam welds of the shroud during pre-installation inspections. The method of inspection will be based on accessibility. If a visual examination is used, the seam welds will be inspected on the inside and outside diameter of the shroud.

If you have any questions, please contact us.

Very truly yours,



G. A. Hunger, Jr.,
Director - Licensing

Attachment

cc: T. T. Martin, Administrator, Region I, USNRC
W. L. Schmidt, USNRC Senior Resident Inspector, PBAPS

DOCUMENT DESCRIPTION	DOCUMENT NUMBER	PREVIOUS SUBMITTAL REVISION	CURRENT SUBMITTAL REVISION	REASON FOR CHANGE (SEE NOTE)
REPAIR HARDWARE, DESIGN SPEC.	25A5579	3	3	1
STABILIZER CODE, DESIGN SPEC.	25A5580	4	4	1
FABRICATION SPEC.	25A5601	2	2	1
CLEANING AND CLEANLINESS CONTROL	21A2040	1	1	1
INSTALLATION SPECIFICATION	25A5581	2	2	1
REACTOR VESSEL STRESS REPORT	25A5607	4	4	1
SHROUD & REPAIR HARDWARE STRESS ANALYSIS	771-58-0994	4	4	1
STABILIZER INSTALLATION, DESIGN REPORT	771-59-0994	4	4	1
SEISMIC ANALYSIS	771-60-0994	2	2	1
FIELD DISPOSITION INSTRUCTION - UNIT 2	0257-71067	1	1	1
FIELD DISPOSITION INSTRUCTION - UNIT 3	0183-71067	1	2	9
PARTS LIST	PL112D6347	1	1	1
PARTS LIST	PL112D6348	2	2	1
PARTS LIST	PL112D6349	0	0	1
PARTS LIST	PL112D6358	0	0	1
PARTS LIST	PL112D6359	0	0	1
PARTS LIST	PL112D6360	0	0	1
PARTS LIST	PL112D6495	0	0	1
PARTS LIST	PL105E1455	3	3	1
NUT, TIE ROD	112D6313	0	0	1
NUT, TOP SUPPORT	112D6321	3	3	1
BOLT, TOP SUPPORT	112D6322	0	0	1
NUT, TOP SUPPORT	112D6323	0	0	1
RETAINER	112D6324	1	1	1
SPRING, RETAINER	112D6325	1	1	1
SLEEVE, JACK	112D6327	0	0	1
WASHER, JACK	112D6328	0	0	1
RING, MID SUPPORT	112D6331	2	2	1
SCREW, MID SUPPORT	112D6332	0	0	1
LATCH	112D6338	0	0	1
UPPER STABILIZER	112D6347	2	2	1
STABILIZER SUPPORT ASSEMBLY	112D6348	4	4	1
TIE ROD ASSEMBLY	112D6349	1	1	1
ROD, TIE	112D6350	3	3	1
SPRING, LOWER	112D6351	1	1	1
SPRING, UPPER	112D6352	2	2	1
SUPPORT, UPPER	112D6353	3	3	1
SUPPORT	112D6354	3	3	1
CONTACT, LOWER	112D6355	1	1	1
SUPPORT, MID	112D6356	1	1	1
CONTACT, UPPER	112D6357	1	1	1
TIE ROD / SPRING ASSEMBLY	112D6358	1	1	1
MID SUPPORT	112D6359	1	1	1
LOWER STABILIZER	112D6360	1	1	1
BOLT, TOGGLE	112D6489	2	2	1
SUPPORT, LOWER	112D6490	2	2	1
TOGGLE	112D6491	2	2	1
PIN, TOGGLE BOLT	112D6492	1	1	1
WASHER, TOGGLE BOLT	112D6493	1	1	1
NUT, TOGGLE BOLT	112D6494	2	2	1
TOGGLE BOLT ASSEMBLY	112D6495	1	1	1
BOLT, JACK	112D6496	1	1	1
SPRING, RETAINER	112D6497	1	1	1
BRACKET, UPPER SPRING	112D6498	3	3	1
SCREW, TOP SUPPORT BOLTING	112D6501	1	1	1
COUPLING, TOP SUPPORT BOLTING	112D6502	3	3	1
EXTENSION, LOWER SPRING	112D6503	1	1	1
PIN	112D6504	1	1	1
PIN, CLEVIS	112D6505	1	1	1
ARM, TORSION	112D5242	1	1	1
BOLT, TORSION ARM	112D5243	1	1	1
NUT, LOCK	112D5244	0	0	1
MODIFICATION DRAWING	105E1455	3	3	1
SPACER, UPPER SUPPORT	112D6752	1	1	1
NUT, TIE ROD	112D6777	0	0	1
BOLT, TOP SUPPORT	112D6788	0	0	1
RETAINER	112D6789	0	0	1
GE RESPONSES TO NRC QUESTIONS (GENERIC)	DRF B13-01732	0	0	1
RESPONSES TO NRC QUESTIONS FOR PBAPS	GENE-B13-01732-001	0	0	1
SHROUD VERTICAL WELD EVALUATION	GENE-523-A062-0695	1	2	9

NOTES:

1. NO CHANGE SINCE LAST SUBMITTAL.
2. DRAWING CORRECTIONS, NO CHANGE IN DESIGN.
3. INCORPORATED UNIT 3 SEISMIC ANALYSIS INFORMATION.
4. MINOR MODIFICATION TO IMPROVE LOAD CAPACITY, FABRICATION, OR ASSEMBLY.
5. DELETED HEAT TREATMENT REQUIREMENT FOR THREADS.
6. INCORPORATED ANALYSIS OF CORE SPRAY PIPING INSIDE THE VESSEL
7. SCOPE INCREASE TO ADD WELD H8 EVALUATION
8. INCORPORATE LESSONS LEARNED IMPROVEMENTS
9. INPROCESS REVISION DUE TO PECO, GE, OR NRC COMMENTS AND APPROVAL

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ATTACHMENT 1



GE Nuclear Energy

Field Disposition Instruction

ORIGINAL WHEN
STAMPED IN RED

FDI NO. HE3-0183-71067-1
REVISION 3
SHEET 1 OF 5

PROJECT PEACH BOTTOM UNIT 3
EQUIPMENT SHROUD
MPL NO. 2-1-26 (B13-D070)

DATE OF ISSUE **SEP 26 1995**
J. TROVATO
ECN/IR/DDR/FDDR
N.A.

This Revision will supersede Revision 2 of this FDI in its entirety. Changes from Revision 2 were incorporated into Section IV, Paragraphs 1.0.b, and 1.0.c.

I. Purpose

This FDI documents the design, requirements, and material required to install the stabilizers for the shroud horizontal welds.

II. Required Documents (supplied by Engineering)

- A. 105E1455, Rev. 3, "Reactor Modification Drawing"
- B. PL105E1455, Rev. 3, "Modification Drawing Parts List"
- C. 25A5581, Rev. 3, "Installation Specification"
- D. 21A2040, Rev. 1, "Cleaning and Cleanliness Control"
- E. 25A5579, Rev. 3 "Shroud Repair Hardware, Design Specification"
- F. 25A5580, Rev. 4 "Shroud Stabilizer, Code Design Specification"
- G. 10CFR50.59 Review for Modification P00435, Rev. 1
- H. 25A5607, Rev. 4, "Reactor Vessel Stress Report"
- I. GENE-771-58-0994, Rev. 4, "Shroud and Shroud Repair Hardware Stress Analysis"
- J. GENE-771-60-0994, Rev. 2, "Seismic Analysis"
- K. QAM-001, Rev. 4, "GE Quality Assurance Manual"
- L. 25A5601, Rev. 2 "Fabrication Specification"
- M. GENE-771-59-0994, Rev. 4, "Design Report for the Installation of Stabilizers on the Core Shroud"

<i>M.O. LENZ</i>	DATE	APPROVALS	DATE	THIS EQUIPMENT IS SAFETY RELATED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
<i>Mark O. Lenz</i>	<u>SEPT. 26, '95</u>	<i>[Signature]</i>	<u>9/26/95</u>	SAFETY FUNCTION IS AFFECTED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
FDI ORIGINAL FOR				FIELD WORK ORDER NO.
<i>H. NARDANO</i>	<u>9/26/95</u>			COMPLETION RECORD
QUALITY CONTROL				REQUIRED BY R.E.
<i>A.L. FINNEY</i>	<u>26 SEP 95</u>			YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
MATL APPL ENGR		DISTRIBUTION CODE		FDI TASK COMPLETED
<i>Paul F. M... [Signature]</i>	<u>26 SEP 95</u>	INTERNAL	EXTERNAL	DATE
ENGRG MANAGER				SITE QUALITY CONTROL
<i>Mark O. Lenz</i>	<u>9/26/95</u>			FIELD MANAGER
RESPONSIBLE ENGR				
<i>Mark O. Lenz</i>	<u>For 9/26/95</u>			
PROJECT MANAGER				
<i>L.E. TSCHANZ</i>				



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REVISION 3
SHEET 2 OF 5

DESCRIPTION OF TASK

III. Material Required (per Paragraph II.A and II.B)

				QTY.	P.L.
A.	112D6347	Rev. 2	Upper Stabilizer Assembly	4	Rev. 1
B.	112D6348	Rev. 4	Stabilizer Support assembly	4	Rev. 2
C.	112D6349	Rev. 1	Tie Rod Assembly	4	Rev. 0
D.	112D6350	Rev. 3	Rod, Tie	4	No
E.	112D6777	Rev. 0	Nut, Tie Rod	4	No
F.	112D6351	Rev. 1	Spring, Lower	4	No
G.	112D6352	Rev. 2	Spring, Upper	4	No
H.	112D6498	Rev. 3	Bracket, Upper Spring	4	No
I.	112D6353P1	Rev. 3	Support, Upper	4	No
J.	112D6353P2	Rev. 3	Support, Upper	4	No
K.	112D6354	Rev. 3	Support	4	No
L.	112D6355	Rev. 1	Contact, Lower	4	No
M.	112D6505	Rev. 1	Pin, Clevis	4	No
N.	112D6321P1	Rev. 3	Nut, Top Support	16	No
O.	112D6321P2	Rev. 3	Nut, Top Support & Pin	16	No
P.	112D6321P3	Rev. 3	Nut, Top Support & Pin	8	No
Q.	112D6321P4	Rev. 3	Nut, Top Support & Pin	16	No
R.	112D6321P5	Rev. 3	Nut, Top Support & Pin	4	No
S.	112D6788	Rev. 0	Bolt, Top Support	8	No
T.	112D6323	Rev. 0	Nut, Top Support	8	No
U.	112D6789	Rev. 0	Retainer	4	No
V.	112D6325	Rev. 1	Spring Retainer	16	No
W.	112D6496	Rev. 1	Bolt, Jack	4	No
X.	112D6327	Rev. 0	Sleeve, Jack Bolt	4	No
Y.	112D6328	Rev. 0	Washer, Jack Bolt	4	No
Z.	112D6497	Rev. 1	Spring, Retainer	4	No
AA.	112D6356	Rev. 1	Support, Mid	4	No
BB.	112D6331	Rev. 2	Ring, Mid Support	4	No
CC.	112D6332	Rev. 0	Screw, Mid Support	4	No
DD.	112D6501	Rev. 1	Screw, Top Support	8	No
EE.	112D6502	Rev. 3	Coupling, Top Support Bolting	4	No
FF.	112D6338P1	Rev. 0	Latch	4	No
GG.	112D6338P2	Rev. 0	Latch	4	No
HH.	112D6357	Rev. 1	Contact, Upper	4	No
II.	112D6358	Rev. 1	Tie Rod-Spring Assembly	4	Rev. 0
JJ.	112D6359	Rev. 1	Mid Support Assembly	4	Rev. 0



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SHEET 3 OF 5

KK.	112D6360	Rev. 1	Lower Stabilizer Assembly	4	Rev. 0
LL.	112D6489	Rev. 2	Bolt, Toggle	8	No
MM.	112D6490	Rev. 2	Support, Lower	4	No
NN.	112D6491	Rev. 2	Toggle	8	No
OO.	112D6492	Rev. 1	Pin, Toggle Bolt	8	No
PP.	112D6493	Rev. 1	Washer, Toggle Bolt	8	No
QQ.	112D6494	Rev. 2	Nut, Toggle Bolt	8	No
RR.	112D6495	Rev. 1	Toggle Bolt Assembly	8	Rev. 0
SS.	112D6503	Rev. 1	Extension, Lower Spring	4	No
TT.	112D6504P1	Rev. 1	Pin	8	No
UU.	112D6504P2	Rev. 1	Pin	4	No
VV.	112D5242P1	Rev. 1	Arm, Torsion	4	No
WW.	112D5242P2	Rev. 1	Arm, Torsion	4	No
XX.	112D5243	Rev. 1	Bolt, Torsion Arm	4	No
YY.	112D5244	Rev. 0	Nut, Lock	8	No
ZZ.	112D6321P6	Rev. 3	Nut, Top Support & Pin	4	No
AAA.	112D6752	Rev. 1	Spacer, Upper Support	8	No

IV. Repair Procedure

All of the stabilizer installation shall be performed underwater. All work shall be performed in accordance with the documents of Paragraph II.A and II.C.

1.0 Pre-Installation Visual Examination.

- a. Perform a VT-1 examination of the RPV wall and shroud wall at the expected contact locations with the installed shroud stabilizer assemblies.
- b. Perform a VT-1 examination of the circumferential weld (H9) between the shroud support plate and the RPV for a minimum length of 13.5 inches, as accessible, adjacent to the installation location for each shroud stabilizer lower support.
- c. Perform an enhanced VT-1 visual inspection or UT inspection of the vertical shroud welds V3 through V6, for a minimum length of 14.0 inches from the intersection with horizontal H4 weld.

2.0 Shroud Head and Shroud Support Plate.

Machine the required slots in the shroud head and the holes in the shroud support plate, per II.A.

3.0 Repair Clamp Installation

Install the four stabilizers in accordance with the requirements in Paragraph II.A.



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SHEET 4 OF 5

4.0 Post-Installation Examination

A visual examination of the completed repair shall be performed. The television camera shall be capable of resolving a .001 inch diameter wire on a neutral gray background.

- a. Examine each clevis pin, 112D6505, to assure that it is properly located and in contact with the bottom of the slot in the lower spring.
- b. Examine the stabilizer assembly for contact between the RPV wall and the upper contact (1 contact point), mid support (2 contact points), and lower contact (1 contact point).
- c. Examine the stabilizer assembly for contact between the shroud and the upper support (3 contact points minimum) and lower spring (1 contact point minimum).
- d. Examine the Lock Nut (112D5244) on each of eight toggle bolt assemblies, to verify that crimping has occurred.
- e. Examine to confirm that all locking devices are engaged.

V. Quality Requirements

1.0 GE site Quality Control Representatives shall provide QC surveillance and document the field work performed, to insure that the requirements of this FDI and Modification drawing 105E1455 have been met. All work is to be performed in accordance with GE Quality Assurance Manual QAM-001, Rev. 4

2.0 The following shall be the minimum Quality Control Documentation requirements:

- a. Video tape of the completed repair.
- b. Process documentation and inspection data sheets as applicable.
- c. As-built dimensions per II.A.

3.0 The following procedures and supporting documentation shall be submitted to GE Site QA and Plant Owner (as applicable) for review, and approval obtained prior to use. Previously approved GENE procedures may be used in satisfying the requirements of this paragraph provided they are approved by the Plant Owner.

- a. Installation procedures, travelers, or sequence data sheets, measurement data sheets, drawings, sketches, instructions, etc. These procedures or travelers shall include cleaning and cleanliness, tool control, machining process, and visual inspection methods.
- b. Hardware certifications.



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VI. Safety/Reliability

Safety and reliability have been considered in the issue of the design documents for this project. The requirements for this design are contained in the Design Specifications 25A5579 and 25A5580. The seismic analysis of the repair is documented in GENE-771-60-0994. The structural analysis of the repair is documented in GENE-771-58-0994 and 25A5607. The safety evaluation for the repair is contained in 10CFR50.59 Review for Modification P00435. No new safety requirements, reviews or technical specifications are required by this FDI.

ATTACHMENT 2