



SVP-14-057

August 1, 2014

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Quad Cities Nuclear Power Station, Units 1 and 2  
Renewed Facility Operating License Nos. DPR-29 and DPR-30  
NRC Docket Nos. 50-254 and 50-265

**Subject:** Owner's Activity Report Submittal  
Fifth 10-Year Interval 2014 Refueling Outage Activities

**References:** 1) Letter from T. Tate (USNRC) to M. Pacilio (Exelon), "Quad Cities Nuclear Power Station, Units 1 and 2 – Safety Evaluation in Support of Request for Relief Associated with the Fifth 10 Year Interval Inservice Inspection Program," dated September 30, 2013  
2) Letter from T. Hanley (Exelon) to USNRC, "90-Day Post Outage ISI Letter," dated July 5, 2013

This letter submits the Owner's Activity Report (i.e., Form OAR-1) and In-vessel Visual Inspection (IVVI) Report for the Quad Cities Nuclear Power Station (QCNPS) Unit 2 refueling outage (Q2R22) which began on April 7, 2014, and was completed on May 7, 2014. This is the first refueling outage conducted in the first inspection period of the fifth 10-year inservice inspection interval for QCNPS Unit 2. A copy of the Owner's Activity Report and IVVI Report are provided as Attachments 1 and 2 to this letter.

This Owner's Activity Report is submitted in accordance with American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Case N-532-4, "Repair/Replacement Activity Documentation Requirements and Inservice Summary Report Preparation and Submission," and the Reference 1 NRC Safety Evaluation, which authorized use of Code Case N-532-4 at QCNPS (i.e., Relief Request ISR-09). Code Case N-532-4 requires an Owner's Activity Report Form OAR-1 to be prepared and certified upon completion of each refueling outage. In accordance with the conditions of Code Case N-532-4, this OAR-1 form is being submitted within ninety days of the completion of the refueling outage.

The IVVI results are provided to report completed vessel internal inspections and to document B-N-1 and B-N-2 relief request exam completion. Additionally, no welds were reclassified or changed status within the IGSCC program this outage.

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Finally, Attachment 3 includes a corrected NIS-2 (from the fourth 10-year inservice inspection interval) that was previously submitted in Reference 2.

Should you have any questions concerning this letter, please contact Mr. Wally Beck, Regulatory Assurance Manager, at (309) 227-2800.

Respectfully,

*Ken O'Neil (to)*

Scott Darin  
Site Vice President  
Quad Cities Nuclear Power Station

Attachments: 1. Owner's Activity Report, Form OAR-1  
2. In-vessel Visual Inspection Report  
3. Revised form NIS-2 Owners Report of Repair or Replacement from 4<sup>th</sup> Interval

cc: Regional Administrator – Region III  
NRC Senior Resident Inspector, Quad Cities Station



Attachment 1  
Owners Activity Report, Form OAR-1

**FORM OAR-1 OWNER'S ACTIVITY REPORT**

Report Number Refueling Outage Q2R22 OAR-1

Plant Quad Cities Nuclear Power Station, 22710 206<sup>th</sup> Ave. North, Cordova, IL 61242

Unit No. 2 Commercial Service Date 03/10/1973 Refueling Outage Number Q2R22  
(if applicable)

Current Inspection Interval 5<sup>th</sup> Inspection Interval (ISI), 2<sup>nd</sup> Inspection Interval (Containment)  
(1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, other)

Current Inspection Period 1<sup>st</sup> Inspection Period (ISI), 2<sup>nd</sup> Inspection Period (Containment)  
(1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>)

Edition and Addenda of Section XI applicable to the Inspection Plans 2007 Edition with 2008 Addenda (ISI),  
2001 Edition with 2003 Addenda (Containment)

Date / Revision of Inspection Plans 9/19/12/Revision 0

Edition and Addenda of Section XI applicable to repair/replacement activities, if different than the inspection plans N/A

Code Cases used: N-532-4

**CERTIFICATE OF CONFORMANCE**

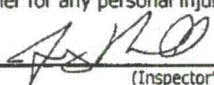
I certify that (a) the statements made in this report are correct; (b) the examinations and tests, meet the Inspection Plan as required by the ASME Code, Section XI; and (c) the repair/replacement activities and evaluations supporting the completion of Q2R22 conform to the requirements of Section XI (refueling outage number)

Signed , ISI Coordinator Date 7/21/14  
(Owner or Owner's designee. Title)

**CERTIFICATE OF INSERVICE INSPECTION**

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Illinois and employed by HSB Global Standards of Hartford, Connecticut have inspected the items described in this Owner's Activity Report, and state that to the best of my knowledge and belief, the Owner has performed all activities represented by this report in accordance with the requirements of Section XI

By signing this certificate neither the Inspector nor his employer makes any warranty expressed or implied concerning the repair/replacement activities and evaluation described in this report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection

 Commissions IL 2211; NB13175 A, N, I  
(Inspector's Signature) National Board, State, Province, and Endorsements

Date 21 Jul 14

**Attachment 1**  
**Owners Activity Report, Form OAR-1**

**TABLE 1**  
**ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRED**  
**EVALUATION FOR CONTINUED SERVICE**

[illegible]



**Attachment 1**  
**Owners Activity Report, Form OAR-1**

**TABLE 2**  
**ABSTRACT OF REPAIR/REPLACEMENT ACTIVITIES REQUIRED FOR CONTINUED SERVICE**

[illegible]

## **Attachment 2**

### **In-vessel Visual Inspection Report**

The ASME Section XI inspections credited during Q2R22 IVVI activities include the once-per-period B-N-1 inspection of the reactor vessel interior and B-N-2 inspections of reactor vessel interior attachments. Credit is being taken for the BWRVIP examinations in place of the B-N-1 and B-N-2 examinations in accordance with Quad Cities Station Relief Request I5R-06, "Request for Relief for the Use of BWRVIP Guidelines in Lieu of Specific ASME Code Requirements on Reactor Vessel Internals and Components Inspection in Accordance with 10CFR50.55a(a)(3)(i) Alternative Provides Acceptable Level of Quality and Safety".

To implement the requirements of the Boiling Water Reactor Vessel Internals Program (BWRVIP), GE was contracted to perform the In-Vessel Visual Inspections (IVVI). The following components and assemblies were examined:

- Visual inspections of the Steam Dryer wall support lugs
- Visual inspections of Core Shroud Vertical welds V5, V6, V7, V26, V27, and V28
- Visual inspections of Instrument Nozzle Upper and Lower RPV interior surfaces

To implement the requirements of the Boiling Water Reactor Vessel Internals Program (BWRVIP), GE was contracted to perform the In-Vessel Visual Inspections (IVVI). The following components and assemblies were examined:

- 42 components on jet pump assemblies, including UT on 20 jet pump beams, in accordance with the BWRVIP-41 Rev. 3, "BWR Jet Pump Assembly Inspection and Flaw Evaluation Guidelines".
- 36 core spray piping welds in accordance with the BWRVIP-18 Revision 1-A, "BWR Core Spray Internals Inspection and Flaw Evaluation Guidelines".
- All of the core spray sparger brackets, 50% of the sparger nozzle welds, and all of the sparger pipe end cap welds in accordance with the BWRVIP-18 Revision 1-A, "BWR Core Spray Internals Inspection and Flaw Evaluation Guidelines".
- 6 core shroud vertical welds in accordance with BWRVIP-76 Revision 1, "BWR Core Shroud Inspection and Flaw Evaluation Guidelines".
- 4 Attachment welds for the steam dryer support lugs in accordance with BWRVIP-48-A, "Vessel ID Attachment Weld Inspection and Flaw Evaluation Guidelines".
- Steam dryer examinations of the tee to cap doubler welds. Dryer inspections were performed in accordance with BWRVIP-139-A, "Steam Dryer Inspection and Flaw Evaluation Guidelines".



## **Attachment 2**

### **In-vessel Visual Inspection Report**

**In addition to the BWRVIP inspection guidance, the following augmented examinations were also performed as part of the Q2R22 IVVI activities:**

- **48 jet pump components not required by BWRVIP-41 Rev. 3, "BWR Jet Pump Assembly Inspection and Flaw Evaluation Guidelines" per programmatic requirements.**
- **Selected cast austenitic stainless steel components (CASS) in accordance with license renewal commitments.**
- **Accessible interior surfaces on four instrument nozzles per programmatic requirements.**
- **Reinspection of mechanical damage at 3 steam separator locations per programmatic requirements.**
- **Reinspection of mechanical damage at 3 steam dryer locations per programmatic requirements.**

**Multiple indications (gouges and rub marks) were identified on all four of the Steam Dryer wall support lugs. These indications were previously observed in Q2R21. A comparison of the inspection results from Q2R21 to Q2R22 found no apparent change to the previous indications and no new indications were identified. These indications are documented in IR 1648005 and evaluated for continued service under EC 397522. Quad Cities will continue to monitor these conditions in accordance with the Reactor Internals Program.**

### Attachment 3

#### Revised form NIS-2 Owners Report of Repair or Replacement from 4th Interval

*[The following text is extremely faint and largely illegible. It appears to be a form with multiple sections, likely containing fields for vehicle information, owner details, and a detailed description of the repair or replacement work performed. The text is organized into paragraphs and possibly a table or list structure.]*

*[Section 1: Vehicle Information]*

*[Section 2: Owner Information]*

*[Section 3: Description of Repair/Replacement Work]*

*[Section 4: Additional Notes]*

*[Section 5: Signature/Date]*



**FORM NIS-3 OWNERS REPORT OF REPAIR OR REPLACEMENT**  
As Required by the Provisions of ASME Code Section XI

1. Owner: Exelon Generation Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

Date: 5/31/2013  
Sheet: 1 of 1  
Unit: 1

2. Plant: Quad Cities Generating Station  
22710 206th Ave. North, Cordova, IL 61242

Program No.: 13-004 WO: 1445076-01  
Repair Organization P.O. No., Job No., etc.

3. Work Performed by: Quad Cities Generating Station  
22710 206th Ave. North, Cordova, IL 61242

Type Code Symbol Stamp: None  
Authorization No.: None  
Expiration Date: N/A

4. Identification of System: Boiler Heat Exchanger, Class 2

5. (a) Applicable Construction Code: ASME Sec. VIII Edition: 1958 Addenda: N/A Code Case: N/A

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1995 Addenda: 1995 Code Case: N/A

6. Identification of Components Repaired or Replaced, and Replacement Components:

Name of Component	Name of Mfr.	Mfr. Ser. No.	Mfr. Bd. No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Floating Head	General Electric	UTC 2937493	N/A	1-1003-A	N/A	Replacement	No
Expansion Joint	Hugan Precision	UTC 2935774	N/A	1-1003-A	N/A	Replacement	No
Cap Nip	GE / Nova	UTC 2931323 2931577	N/A	1-1003-A	N/A	Replacement	No
Hex Nut	Nova	UTC 2931323 2931326	N/A	1-1003-A	N/A	Replacement	No
Stud	Nova	UTC 2931329 2931330, 2931578 2927943	N/A	1-1003-A	N/A	Replacement	No
Threaded Rod	Nova	UTC 2930568	N/A	1-1003-A	N/A	Replacement	No
Hex Nut	Nova	UTC 2931322	N/A	1-1003-A	N/A	Replacement	No
Coupling	Consolidated	UTC 2931322	N/A	1-1003-A	N/A	Replacement	No

7. Description of Work: Installed floating head, expansion joint, and bolting.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒ Escape ☐  
Other ☐ Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F

9. Remarks: None

**CERTIFICATE OF COMPLIANCE**

We certify that the statements made in this report are correct and this Repair / Replacement conforms to the rules of ASME Code, Section XI

Type of Code Symbol Stamp N/A - Exelon Nuclear NRCF30 App B, C, A Program

Certificate of Authorization No. N/A Expiration Date N/A

Signed Matthew J. Piro, P.E. Date 6/7/2013  
Director of Owner's Inspection, Inc.  
3/25/14

**CERTIFICATE OF INSERVICE INSPECTION**

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State of Illinois, and employed by NBIC of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 12/12/12 to 12/12/12, and state that to the best of my knowledge and belief, the owner has performed examinations and taken corrective measures described in this Owner's Report in accordance the requirements of the ASME Code, Section XI. By signing this certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commission NB1375 A N1 IL2211  
National Board, New York, and its Jurisdictions  
Date 12/12/12 20 12