



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

October 22, 2009

Mr. Michael P. Gallagher, Vice President  
License Renewal Projects  
Exelon Generation Company, LLC  
200 Exelon Way, KSA/2-E  
Kennett Square, PA 19348

SUBJECT: ISSUANCE OF RENEWED FACILITY OPERATING LICENSE NO. DPR-50 FOR  
THE THREE MILE ISLAND NUCLEAR STATION, UNIT 1

Dear Mr. Gallagher:

The U.S. Nuclear Regulatory Commission (NRC or the staff) has issued Renewed Facility Operating License No. DPR-50 for the Three Mile Island Nuclear Station, Unit 1 (TMI-1) (Enclosure 1). The NRC issued the renewed facility operating license based on the staff's review of your application dated January 8, 2008, as supplemented by letters submitted to the NRC through June 9, 2009. The review did not result in an amendment of the technical specifications for TMI-1. The period of extended operation for TMI-1 begins at midnight, April 19, 2014.

Renewed Facility Operating License No. DPR-50 expires at midnight April 19, 2034.

Enclosure 2 is a copy of the related *Federal Register* notice of issuance of the renewed license. The original has been sent to the Office of the Federal Register for publication.

The Technical Specifications provided as Enclosure 3 reflect amendments implemented at TMI-1 as of the date of this letter. Amendment No. 271 to Facility Operating License No. DPR-50 was issued by the NRC by letter dated September 15, 2009 (Agencywide Documents Access and Management System Accession No. ML092310530), but is not yet implemented at TMI-1. In accordance with Title 10 of the *Code of Federal Regulations*, Section 54.33(d), Exelon Generation Company, LLC shall update the Technical Specifications regarding amendment 271 consistent with the timing requirements set forth in that amendment.

M. Gallagher

- 2 -

If you have any questions regarding this issue, please feel free to contact me at 301-415-2878 or by e-mail at [Jay.Robinson@nrc.gov](mailto:Jay.Robinson@nrc.gov).

Sincerely,

A handwritten signature in black ink that reads "Jay E. Robinson". The signature is written in a cursive, flowing style.

Jay E. Robinson, Project Manager  
Projects Branch 1  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket No. 50-289

Enclosures:

1. Renewed Facility Operating License  
No. DPR-50
2. Copy of *Federal Register* notice
3. Appendix A, Technical Specifications

cc: Listserv

EXELON GENERATION COMPANY, LLC

(Three Mile Island Nuclear Station, Unit 1)

DOCKET NO. 50-289

RENEWED FACILITY OPERATING LICENSE

Renewed License No. DPR-50

1. The Nuclear Regulatory Commission (the Commission) having found that:
  - a. The application for a renewed license filed by the applicant complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter 1 and all required notifications to other agencies or bodies have been duly made;
  - b. Construction of the Three Mile Island Nuclear Station, Unit 1 (TMI or the facility) has been substantially completed in conformity with Construction Permit No: CPPR-40, the application, as amended, the provisions of the Act and the rules and regulations of the Commission;
  - c. The facility will operate in conformity with the application, as amended, the provisions of the Act and the rules and regulations of the Commission;
  - d. There is a reasonable assurance: (1) that the activities authorized by this renewed operating license can be conducted without endangering the health and safety of the public, and (2) that such activities will be conducted in compliance with the rules and regulations of the Commission;
  - e. Exelon Generation Company, LLC (Exelon Generation Company) is technically and financially qualified to engage in the activities authorized by this renewed operating license in accordance with the rules and regulations of the Commission;
  - f. Exelon Generation Company has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
  - g. The issuance of this renewed operating license will not be inimical to the common defense and security or to the health and safety of the public;

- h. After weighing the environmental, economic, technical, and other benefits of the facility against environmental costs and considering available alternatives, the issuance of Renewed Facility Operating License No. DPR-50 is in accordance with 10 CFR Part 50, Appendix D, of the Commission's regulations and all applicable requirements of said Appendix D have been satisfied;
  - i. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40, and 70, including 10 CFR Section 30.33, 40.32, 70.23 and 70.31; and
  - j. Actions have been identified and have been or will be taken with respect to (1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21(a)(1); and (2) time-limited aging analyses that have been identified to require review under 10 CFR 54.21(c), such that there is reasonable assurance that the activities authorized by the renewed operating license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for the facility, and that any changes made to the facility's current licensing basis in order to comply with 10 CFR 54.29(a) are in accordance with the Act and the Commission's regulations.
2. Renewed Facility Operating License No. DPR-50 is hereby issued to Exelon Generation Company to read as follows:
- a. This renewed license applies to the Three Mile Island Nuclear Station, Unit 1, a pressurized water reactor and associated equipment (the facility), owned and operated by Exelon Generation Company. The facility is located in Dauphin County, Pennsylvania, and is described in the "Updated Final Safety Analysis Report (UFSAR)" as supplemented and amended and the Environmental Report as supplemented and amended.
  - b. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:
    - (1) Exelon Generation Company, pursuant to Section 104b of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess, use, and operate the facility in accordance with the procedures and limitations set forth in this renewed license;
    - (2) Exelon Generation Company, pursuant to the Act and 10 CFR Parts 30, 40 and 70 to receive, possess and use at any time any byproduct, source and special nuclear material as reactor fuel, sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required for reactor operation;

- (3) Exelon Generation Company, pursuant to the Act and 10 CFR Parts 30, 40 and 70 to receive, possess at either TMI-1 or TMI-2, and use in amounts as required for TMI-1 any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis, testing, instrument calibration, or associated with radioactive apparatus or components. Other than radioactive apparatus and components to be used at TMI Unit 2 in accordance with the TMI-2 License, the radioactive apparatus and components that may be moved from TMI Unit 1 to TMI Unit 2 under this provision shall be limited to: (1) outage-related items (such as contaminated scaffolding, tools, protective clothing, portable shielding and decontamination equipment); and (2) other equipment belonging to TMI Unit 1 when storage of such equipment at TMI-2 is deemed necessary for load handling or contamination control considerations;
- (4) Exelon Generation Company, pursuant to the Act and 10 CFR Parts 30 and 70, to possess at the TMI Unit 1 or Unit 2 site, but not separate, such byproduct and special nuclear materials as may be produced by the operation of either unit. Radioactive waste may be moved from TMI Unit 2 to TMI Unit 1 under this provision for collection, processing (including decontamination), packaging, and temporary storage prior to disposal. Radioactive waste that may be moved from TMI Unit 1 to TMI Unit 2 under this provision shall be limited to: (1) dry active waste (DAW) temporarily moved to TMI Unit 2 during waste collection activities, and (2) contaminated liquid contained in shared system piping and tanks. Radioactive waste that may be moved from TMI Unit 1 to TMI Unit 2 under this provision shall not include spent fuel, spent resins, filter sludge, evaporator bottoms, contaminated oil, or contaminated liquid filters.

The storage of radioactive materials or radwaste generated at TMI Unit 2 and stored at TMI Unit 1 shall not result in a source term that, if released, would exceed that previously analyzed in the UFSAR in terms of off-site dose consequences.

The storage of radioactive materials or radwaste generated at TMI Unit 1 and stored at TMI Unit 2 shall not result in a source term that, if released, would exceed that previously analyzed in the PDMS SAR for TMI Unit 2 in terms of off-site dose consequences.

- c. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Section 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

- (1) Maximum Power Level

Exelon Generation Company is authorized to operate the facility at steady state reactor core power levels not in excess of 2568 megawatts thermal.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 271 are hereby incorporated in the license. The Exelon Generation Company shall operate the facility in accordance with the Technical Specifications.

(3) Physical Protection

Exelon Generation Company shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822), and the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans<sup>1</sup>, submitted by letter dated May 17, 2006, is entitled: "Three Mile Island Nuclear Station Security Plan, Training and Qualification Plan, and Safeguards Contingency Plan, Revision 3." The set contains Safeguards Information protected under 10 CFR 73.21.

(4) Fire Protection

Exelon Generation Company shall implement and maintain in effect all provisions of the Fire Protection Program as described in the Updated FSAR for TMI-1.

Changes may be made to the Fire Protection Program without prior approval by the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire. Temporary changes to specific fire protection features which may be necessary to accomplish maintenance or modifications are acceptable provided that interim compensate measures are implemented.

(5) The licensee shall implement a secondary water chemistry monitoring program to inhibit steam generator tube degradation. This program shall include:

- a. Identification of a sampling schedule for the critical parameters and control points for these parameters;
- b. Identification of the procedures used to measure the values of the critical parameters;
- c. Identification of process sampling points;
- d. Procedure for the recording and management of data;

---

<sup>1</sup> The Training and Qualification Plan and Safeguards Contingency Plan are Appendices to the Security Plan.

- e. Procedures defining corrective actions of off control point chemistry conditions; and
- f. A procedure identifying (1) the authority responsible for the interpretation of the data, and (2) the sequence and timing of administrative events required to initiate corrective action.

- (6) Inservice Testing - DELETED
- (7) Aircraft Movements - DELETED
- (8) Repaired Steam Generators - DELETED
- (9) Long Range Planning Program - DELETED

Sale and License Transfer Conditions

- (10) DELETED
- (11) DELETED
- (12) DELETED
- (13) DELETED
- (14) DELETED
- (15) Exelon Generation Company shall take all necessary steps to ensure that the decommissioning trust is maintained in accordance with the application, the requirements of the Order Approving Transfer of License and Conforming Amendment, dated January 8, 2009 and the related Safety Evaluation dated December 23, 2008.
- (16) DELETED
- (17) Mitigation Strategy License Condition

The licensee shall develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

- (a) Fire fighting response strategy with the following elements:
  - 1. Pre-defined coordinated fire response strategy and guidance
  - 2. Assessment of mutual aid fire fighting assets
  - 3. Designated staging areas for equipment and materials
  - 4. Command and control
  - 5. Training of response personnel

- (b) Operations to mitigate fuel damage considering the following:
  - 1. Protection and use of personnel assets
  - 2. Communications
  - 3. Minimizing fire spread
  - 4. Procedures for implementing integrated fire response strategy
  - 5. Identification of readily-available pre-staged equipment
  - 6. Training on integrated fire response strategy
  - 7. Spent fuel pool mitigation measures
  
- (c) Actions to minimize release to include consideration of:
  - 1. Water spray scrubbing
  - 2. Dose to onsite responders
  
- (18) Upon implementation of Amendment No. 264 adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by Specification 4.12.1.5, in accordance with TS 6.20.c.(i), the assessment of CRE habitability as required by Specification 6.20.c.(ii), and the measurement of CRE pressure as required by Specification 6.20.d, shall be considered met. Following implementation:
  - (a) The first performance of Specification 4.12.1.5, in accordance with Specification 6.20.c.(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of Specification 1.25, as measured from August 21, 2000, the date of the most recent successful tracer gas test, as stated in the December 9, 2003, letter response to Generic Letter 2003-01, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.
  
  - (b) The first performance of the periodic assessment of CRE habitability, Specification 6.20.c.(ii), shall be within 3 years, plus the 9-month allowance of Specification 1.25, as measured from August 21, 2000, the date of the most recent successful tracer gas test, as stated in the December 9, 2003, letter response to Generic Letter 2003-01, or within the next 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.
  
  - (c) The first performance of the periodic measurement of CRE pressure, Specification 6.20.d, shall be within 24 months, plus the 180 days allowed by Specification 1.25, as measured from December 9, 2006, the date of the most recent successful pressure measurement test, or within 180 days if not performed previously.



- (19) At the time of the closing of the transfer of TM1-1, and the respective license from AmerGen Energy Company, LLC (AmerGen) to Exelon Generation Company, AmerGen shall transfer to Exelon Generation Company ownership and control of AmerGen TMI NQF, LLC, and AmerGen Consolidation, LLC shall be merged into Exelon Generation Consolidation, LLC. Also at the time of the closing, decommissioning funding assurance provided by Exelon Generation Company, using an additional method allowed under 10 CFR 50.75 if necessary, must be equal to or greater than the minimum amount calculated on that date pursuant to, and required by 10 CFR 50.75 for TMI-1. Furthermore, funds dedicated for TMI-1 prior to closing shall remain dedicated to TMI-1 following the closing. The name of AmerGen TMI NQF, LLC shall be changed to Exelon Generation TMI NQF, LLC at the time of the closing.
- (20) The information in the UFSAR supplement, as revised, submitted pursuant to 10 CFR 54.21(d), shall be incorporated into the UFSAR no later than the next scheduled update required by 10 CFR 50.71(e) following the issuance of this renewed operating license. Until this update is complete, Exelon Generation Company may not make changes to the information in the supplement. Following incorporation into the UFSAR, the need for prior Commission approval of any changes will be governed by 10 CFR 50.59.
- (21) The UFSAR supplement, as revised, submitted pursuant to 10 CFR 54.21(d), describes certain future activities to be completed prior to and/or during the period of extended operation. The licensee shall complete these activities in accordance with Appendix A of NUREG-1928, "Safety Evaluation Report Related to the License Renewal of Three Mile Island, Unit 1," dated, October, 2009. The licensee shall notify the NRC in writing when activities to be completed prior to the period of extended operation are complete and can be verified by NRC inspection.
- d. This license is effective as of the date of issuance and shall expire at midnight, April 19, 2034.

FOR THE NUCLEAR REGULATORY COMMISSION



Eric J. Leeds, Director  
Office of Nuclear Reactor Regulation

Attachment: Appendix A, Technical  
Specifications

Date of Issuance: October 22, 2009

Renewed Operating License No. DPR-50

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-289

EXELON GENERATION COMPANY, LLC,

THREE MILE ISLAND NUCLEAR STATION, UNIT 1

NOTICE OF ISSUANCE OF RENEWED FACILITY

OPERATING LICENSE NO. DPR-50

FOR AN ADDITIONAL 20-YEAR PERIOD

Notice is hereby given that the U.S. Nuclear Regulatory Commission (NRC or the Commission) has issued Renewed Facility Operating License No. DPR-50 to Exelon Generation Company, LLC, (licensee), the operator of the Three Mile Island Nuclear Station, Unit 1, (TMI-1). Renewed Facility Operating License No. DPR-50 authorizes operation of TMI-1 by the licensee at reactor core power levels not in excess of 2568 megawatts thermal (852 megawatts electric), in accordance with the provisions of the TMI-1 renewed license and its technical specifications. The notice also serves as the record of decision for the renewal of Facility Operating License No. DPR-50, consistent with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 51.103, "Record of Decision – General." As discussed in the final Supplemental Environmental Impact Statement for TMI-1 (NUREG-1437, Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 37, Regarding Three Mile Island Nuclear Station, Unit 1," issued June 2009), the Commission has considered a range of reasonable alternatives that included fossil fuel generation, renewable energy sources, and demand-side measures such as energy conservation. The factors considered in the record of decision appear in Supplement 37.

ENCLOSURE 2

TMI-1 is a pressurized water reactor located 10 miles southeast of Harrisburg, Pennsylvania. The application for the renewed license complied with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations. As required by the Act and the Commission's regulations in 10 CFR Chapter 1, the Commission has made appropriate findings, which are set forth in the license.

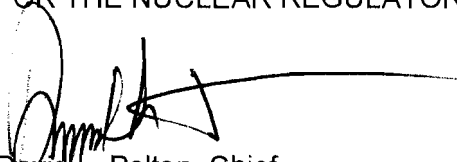
Prior public notice of the action involving the proposed issuance of the renewed license and of an opportunity for a hearing regarding the proposed issuance of the renewed license was published in the *Federal Register* on March 14, 2008 (73 FR 13923). For further details with respect to this action, see: (1) Exelon Generation Company, LLC, license renewal application for TMI-1 dated January 8, 2008, as supplemented by letters through May 31, 2009; (2) the Commission's safety evaluation report (SER) (NUREG-1928), published in October, 2009; (3) the licensee's updated safety analysis report; and (4) the Commission's final environmental impact statement (FEIS) (NUREG-1437, Supplement 37), for TMI-1 published in June 2009. These documents are available at the NRC's Public Document Room, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852, and can be viewed from the NRC Public Electronic Reading Room at <http://www.nrc.gov/reading-rm/adams.html>.

Copies of Renewed Facility Operating License No. DPR-50, may be obtained by writing to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001, Attention: Director, Division of License Renewal. Copies of the TMI-1 SER (NUREG-1928) and the Final Environmental Impact Statement (NUREG-1437, Supplement 37) may be purchased from the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161 (<http://www.ntis.gov>), 703-605-6000, or Attention: Superintendent of Documents, U.S. Government Printing Office, P.O. Box 371954 Pittsburgh, P.A. 15250-7954 (<http://www.gpoaccess.gov>), 202-512-1800. All orders should clearly identify the NRC

publication number and the requestor's Government Printing Office deposit account number or Visa or MasterCard number and expiration date.

Dated at Rockville, Maryland, this 22<sup>nd</sup> day of October, 2009.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read 'D. Pelton', with a long horizontal line extending to the right.

David L. Pelton, Chief  
Projects Branch 1  
Division of License Renewal  
Office of Nuclear Reactor Regulation

If you have any questions regarding this issue, please feel free to contact me at 301-415-2878 or by e-mail at [Jay.Robinson@nrc.gov](mailto:Jay.Robinson@nrc.gov).

Sincerely,  
*/RA/*  
Jay E. Robinson, Project Manager  
Projects Branch 1  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket No. 50-289

Enclosures:

1. Renewed Facility Operating License  
No. DPR-50
2. Copy of *Federal Register* notice
3. Appendix A, Technical Specifications

cc: Listserv

DISTRIBUTION:

HARD COPY:  
DLR RF

E-MAIL:

PUBLIC

- RidsNrrDlr Resource
- RidsNrrDlrRpb1 Resource
- RidsNrrDlrRpb2 Resource
- RdsNrrDlrRer1 Resource
- RidsNrrDlrRer2 Resource
- RidsNrrDlrRerb Resource
- RidsNrrDlrRpob Resource
- RidsNrrDciCvib Resource
- RidsNrrDciCpnb Resource
- RidsNrrDciCsgb Resource
- RidsNrrDraAfpb Resource
- RidsNrrDraApla Resource
- RidsNrrDeEmcb Resource
- RidsNrrDeEeeb Resource
- RidsNrrDssSrxb Resource
- RidsNrrDssSbpb Resource
- RidsNrrDssScvb Resource
- RidsOgcMailCenter

-----  
 JRobinson            RConte, RI  
 MModes, RI        RBellamy, RI  
 DKern, RlPBamford  
 JBrand, RI

ADAMS Accession Nos.: **ML092710456** (Package) **ML092710401** (Letter) **ML092710410** (Renewed Operating License) **ML092710438** (*Federal Register* Notice) **ML092710463** (Appendix A)  
 \*concurrent via e-mail

|        |             |                       |                 |                |                          |
|--------|-------------|-----------------------|-----------------|----------------|--------------------------|
| OFFICE | PM:RPB1:DLR | LA:DLR                | Tech Editor*    | PM:LPLI-2:DORL | BC:LPLI-2:DORL           |
| NAME   | JRobinson   | SFiguroa              | KAzariah-Kribbs | PBamford       | HChernoff                |
| DATE   | 10/13/09    | 10/02/09              | 10/05/09        | 10/13/09       | 10/16/09                 |
| OFFICE | BC:RPB1:DLR | D:DLR:NRR             | OGC             | D:NRR          | PM:RPB1:DLR              |
| NAME   | BPham       | BHolian<br>(Slee for) | BMizuno         | ELeeds         | JRobinson<br>(Signature) |
| DATE   | 10/14/09    | 10/14/09              | 10/13/09        | 10/22/09       | 10/22/09                 |