



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

March 23, 2017

Ms. Jessica Azulay Chasnoff
Alliance for a Green Economy
2013 E. Genesee St.
Syracuse, NY 13210

Dear Ms. Azulay Chasnoff:

This letter responds to the petition submitted by Beyond Nuclear; The Alliance for a Green Economy; Center for Health, Environment & Justice; Citizens' Environmental Coalition; Peace Action New York State; CNY Citizens' Awareness Network; Syracuse Peace Council; and Peace Action Central New York (the petitioners) on March 9, 2012, as supplemented by letters dated March 13, 2012, and March 20, 2012. As the point of contact for the petitioners, you asked that correspondence be addressed to you. The petition was filed under Title 10 of the *Code of Federal Regulations* (10 CFR) 2.206, "Requests for action under this subpart." The petition; the supplements; the transcripts of the public meetings on April 17, 2012, and June 29, 2015; and all documentation related to the petition are in the Agencywide Documents Access and Management System (ADAMS).¹

The petition requests that the U.S. Nuclear Regulatory Commission (NRC or the Commission) take actions regarding the containment ventilation system at the James A. FitzPatrick Nuclear Power Plant (FitzPatrick). Specifically, the petition asks the NRC to take enforcement action against Entergy Nuclear Operations, Inc. (ENO or the licensee), to immediately suspend the FitzPatrick operating license, to initiate public hearings on the pressure suppression containment system of the General Electric Mark I boiling-water reactor (BWR) at FitzPatrick, and to require that the licensee make its reanalyses after the Fukushima Dai-ichi accident publicly available. The request is based on the assertion that the General Electric Mark I BWR's pressure suppression containment system is vulnerable during a severe accident.

The NRC established a Petition Review Board (PRB) to review the petition in March 2012. The PRB met internally on March 20, 2012, and decided to take no immediate action. This decision was communicated to the petitioners by e-mail dated March 27, 2012.² The petitioners' request to suspend the FitzPatrick operating license immediately was denied for the following reasons:

- The Near-Term Task Force (NTTF) concluded in its report dated July 12, 2011,³ that continued operation of the U.S. fleet of nuclear reactors does not pose an imminent risk to public health and safety and is not inimical to the common defense and security.

¹ The full petition includes the initial petition under 10 CFR 2.206, dated March 9, 2012, from Beyond Nuclear, The Alliance for a Green Economy, and others as noted above (ADAMS Accession No. ML12074A032); supplements to the petition (ADAMS Accession Nos. ML12079A036, ML12081A284, ML15198A048, ML15198A051, and ML15198A054); the transcript of public meeting on April 17, 2012 (ADAMS Accession No. ML12132A279); and the transcript (ADAMS Accession No. ML15197A307) and audio recording (see ADAMS Accession No. ML15197A327) of the public meeting on June 29, 2015.

² E-mail from Bhalchandra Vaidya to Jessica Azulay, "PRB Decision on Request for Immediate Action Re: FitzPatrick Emergency Enforcement Petition, March 9, 2012," dated March 27, 2012.

³ NTTF, "Recommendations for Enhancing Reactor Safety in the 21st Century," SECY-11-0093, Enclosure, dated July 12, 2011 (ADAMS Accession No. ML111861807), pp. vii-x.

- These NTTF findings are based on (1) the low likelihood of a beyond design-basis event occurring at a U.S. nuclear power plant and (2) the fact that current plant capabilities include combustible gas control and mitigation of major fires or explosions. The Commission endorsed the NTTF report by the Commission Voting Record for Decision Item SECY-11-0093.⁴
- Order EA-12-050, dated March 12, 2012,⁵ states that given current regulatory requirements and existing plant capabilities of BWRs with Mark I containments, a sequence of events such as the Fukushima Dai-ichi accident is unlikely to occur in the United States. Therefore, the continuing operations and licensing activities at BWR plants with Mark I containments do not pose an imminent threat to public health and safety.
- The NRC staff is aware of the FitzPatrick safety evaluation dated September 28, 1992,⁶ and Generic Letter 89-16.⁷ The staff considered this information in its overall assessment in determining whether BWRs with Mark I and Mark II containments are safe to operate, given the events at Fukushima. The NRC staff also inspected the FitzPatrick hardened wetwell vent system⁸ and reviewed the results of Temporary Instruction 2515/183 at FitzPatrick in making its determination.⁹ In Order EA-12-050, the NRC staff explicitly recognized the wide variance in the reliability of the hardened vents among Mark I plants, with FitzPatrick as one example of that variance.

By e-mail from Bhalchandra Vaidya to Jessica Azulay on October 4, 2012,¹⁰ the NRC advised the petitioners of the initial recommendation to accept in part and hold in abeyance the following three issues in the petition addressing hydrogen control and mitigation, as they were the subject of ongoing staff reviews:

- (1) unlikely ignition points associated with detonation of hydrogen gas during a severe accident
- (2) hydrogen considerations during primary containment venting
- (3) mitigation strategies regarding hydrogen considerations during primary containment venting

⁴ Commission Voting Record, Decision Item SECY-11-0093, "Near-Term Report and Recommendations for Agency Actions Following the Events in Japan," dated August 19, 2011 (ADAMS Accession No. ML112310746).

⁵ Order EA-12-050, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents," dated March 12, 2012 (ADAMS Accession No. ML12054A696 (package)).

⁶ Letter from Steven A. Varga, NRC, to Ralph E. Beedle, Power Authority of the State of New York, "Hardened Wetwell Vent Capability at the James A. FitzPatrick Nuclear Power Plant," dated September 28, 1992 (ADAMS Accession No. ML13015A630).

⁷ Generic Letter 89-16, "Installation of a Hardened Wetwell Vent (Generic Letter 89-16)," dated September 1, 1989 (ADAMS Accession No. ML031140220).

⁸ Letter from Curtis J. Cowgill, NRC, to Harry P. Salmon Jr., New York Power Authority, "Notice of Violation (NRC Region I Inspection No. 50-333/95-06)," dated April 18, 1995 (ADAMS Accession No. ML13017A241).

⁹ Letter from Lawrence T. Doerflein, NRC, to Mr. Kevin Bronson, Entergy, "James A. FitzPatrick Nuclear Power Plant—NRC Temporary Instruction 2515/183 Inspection Report 05000333/2011008," dated May 13, 2011 (ADAMS Accession No. ML111330455).

¹⁰ E-mail from Bhalchandra Vaidya, NRC, to Jessica Azulay, Alliance for a Green Economy, "PRB Decision on Initial Recommendation Re: Your Petition under 10CFR2.206 Pertaining to the James A. FitzPatrick Nuclear Plant in Scriba, New York," dated October 4, 2012 (ADAMS Accession No. ML122830351).

In 2016, the NRC staff completed assessments related to the NTTF Tier 2 and Tier 3 items that relate to the petition for the three concerns related to hydrogen control and mitigation. NTTF Recommendation 6 involves performing additional assessments for hydrogen control and mitigation and was grouped under the Tier 3 items. In SECY-15-0137,¹¹ dated October 29, 2015, the staff presented its initial assessment and recommendations to the Commission for resolution of Tier 2 and Tier 3 items. The Commission approved the resolution plans in the related staff requirements memorandum (SRM), dated February 8, 2016,¹² and directed the staff to document the final results of the evaluations after interactions with external stakeholders and the Advisory Committee on Reactor Safeguards (ACRS).

In SECY-15-0137, the staff gave a preliminary assessment for NTTF Recommendation 6 that further regulatory action or study is not warranted. The NRC staff had additional interactions focused on Recommendation 6 after the issuance of SECY-15-0137. Specifically, a public meeting took place on January 7, 2016, when the staff heard from representatives of the nuclear industry, nongovernmental organizations, and members of the public. The comments received during this public meeting can be found in the meeting summary dated January 20, 2016.¹³ The staff considered insights from this meeting and the ACRS letter dated November 16, 2015,¹⁴ on SECY-15-0137 and prepared a "white paper" to support further interactions with the public and ACRS.¹⁵ The staff's final evaluations benefited from interactions with ACRS in February and March 2016, as discussed in the letter from ACRS dated March 15, 2016.¹⁶ The staff provided its final assessment related to hydrogen control and mitigation and closing of Recommendation 6 in SECY-16-0041.¹⁷ The staff based its findings in SECY-16-0041 in part on the requirements imposed through Order EA-13-109.¹⁸

In the e-mail dated October 4, 2012, the NRC staff also advised you that it rejected the other issues in the petition that did not meet the criteria for review under the 10 CFR 2.206 process, as detailed in the following five points:

- (1) The request to suspend the FitzPatrick operating license "pending final resolution of a public challenge to the pre-existing vent line in light of the Fukushima Daiichi nuclear accident" was not accepted for review because the NRC staff had reviewed and evaluated the operation of Mark I reactors and the FitzPatrick plant and determined them

¹¹ SECY-15-0137, "Proposed Plans for Resolving Open Fukushima Tier 2 and 3 Recommendations," dated October 29, 2015 (ADAMS Accession No. ML15254A006 (package)).

¹² SRM-SECY-15-0137, "Proposed Plans for Resolving Open Fukushima Tier 2 & 3 Recommendations," dated February 8, 2016 (ADAMS Accession No. ML16039A175).

¹³ "Summary of January 7, 2016, Public Meeting with Nuclear Energy Institute to Discuss Staff Evaluation of Hydrogen Control, Vent Designs for Other than Mark I and Mark II Containments and Enhanced Instrumentation Associated with Fukushima Open Recommendations," dated January 20, 2016 (ADAMS Accession No. ML16013A277).

¹⁴ Letter from ACRS to Stephen G. Burns, Chairman, NRC, "Plans for Resolving the NRC Near-Term Task Force Open Fukushima Tier 2 and 3 Recommendations," dated November 16, 2015 (ADAMS Accession No. ML15320A074).

¹⁵ White Paper, "Closure of Fukushima Tier 3 Recommendations Related to Containment Vents, Hydrogen Control, and Enhanced Instrumentation," dated February 2, 2016 (ADAMS Accession No. ML16020A245).

¹⁶ Letter from ACRS to Stephen G. Burns, Chairman, NRC, "Closure of Fukushima Tier 3 Recommendations Related to containment Vents, Hydrogen Control, and Enhanced Instrumentation," dated March 15, 2016 (ADAMS Accession No. ML16075A330).

¹⁷ SECY-16-0041, "Closure of Fukushima Tier 3 Recommendations Related to Containment Vents, Hydrogen Control, and Enhanced Instrumentation," dated March 31, 2016 (ADAMS Accession No. ML16049A079).

¹⁸ Order EA-13-109, "Issuance of Order to Modify Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions," dated June 6, 2013 (ADAMS Accession No. ML13143A321). This Order superseded EA-12-050.

to be safe. The results of the evaluations appear in the NTTF report, the Commission voting record, and the safety evaluation dated September 28, 1992, as described above.

- (2) The request to initiate public hearings on whether the pressure suppression containment system of the General Electric Mark I BWR at FitzPatrick should install the fully hardened vent as described in Generic Letter 89-16 was not accepted for review because the NRC staff had fully reviewed and evaluated the issue in the safety evaluation dated September 28, 1992, which states, “[T]he NRC staff has concluded that the design and procedures currently implemented at the FitzPatrick plant are sufficient to satisfy the hardened vent design criteria and ensure adequate plant safety.”
- (3) The request for an independent review of the post-Fukushima reanalyses of the existing FitzPatrick containment ventilation system was rejected because the staff previously reviewed FitzPatrick’s existing containment ventilation system and found, in the safety evaluation dated September 28, 1992, that “the design and procedures currently implemented at the FitzPatrick plant are sufficient to satisfy the hardened vent design criteria and ensure adequate plant safety.” The NRC did not accept this concern for review as the licensee is not required to reanalyze its existing containment ventilation system because it meets the licensee’s current design and licensing basis.
- (4) The assertion that the lack of a direct torus hardened vent system at the FitzPatrick plant raises apparent beyond-design- and licensing-basis vulnerabilities was not accepted for review under the 10 CFR 2.206 process because the NRC staff reviewed this issue and issued Order EA-12-050. This order requires licensees to install reliable hardened vent systems in plants with Mark I containments.
- (5) The NRC did not accept for review the assertion that the Natural Resources Defense Council’s technical report¹⁹ shows that the NRC’s computer models underpredict hydrogen generation rates during severe accidents. As stated by the petitioners, the report suggests that underprediction can result in underdesigned hardened vents that are less effective as mitigation systems. This concern was not accepted for review because the NRC staff previously reviewed and evaluated this issue, provided its findings, and instructed licensees to take actions in Order EA-13-109. Order EA-13-109 sets the design and operational limits for hardened containment vents, including those used at FitzPatrick. The design and operational limits for FitzPatrick’s hardened containment vents are calculated independently of hydrogen generation rates. Therefore, a change in predicted hydrogen generation rates will not result in underdesigned hardened vents.

[Update: By letter dated September 8, 2016,²⁰ ENO submitted a request for extension to comply with NRC Order EA-13-109 concerning implementation of Phase 1 (wetwell vent) of the order. ENO made this request as a result of the tentative sale of FitzPatrick to

¹⁹ Natural Resources Defense Council, “Preventing Hydrogen Explosions in Severe Nuclear Accidents: Unresolved Safety Issues Involving Hydrogen Generation and Mitigation”, dated March 2014, submitted with the petitioners’ June 29, 2015, supplemental petition by e-mail from Paul Gunter, Beyond Nuclear, to Alexander Chereskin, NRC, “Supplemental material for today[’s] 2.206 public mtg,” dated June 29, 2015 (ADAMS Accession No. ML15198A054), pp. 14–62.

²⁰ Letter from Brian R. Sullivan, ENO, to NRC Document Control Desk, “Request for Extension to Comply with NRC Order EA-13-109, ‘Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions,’” dated September 8, 2016 (ADAMS Accession No. ML16252A482).


Exelon Generation²¹ and the additional time needed to complete the work to fully implement the requirements of Order EA-13-109. The NRC staff determined that the licensee has demonstrated good cause for the relaxation of the implementation date for Order EA-13-109, Phase 1, and the NRC granted the relaxation request in a letter dated January 9, 2017.^{22]}

As discussed above, all the concerns in the petition have already been the subject of NRC staff review and have been resolved, and the petition does not present significant new information. The PRB met on July 20, 2016, to discuss the path forward. The PRB decided to reject the petition, inform you of its decision, and provide you another opportunity to address the PRB. By e-mail from Booma Venkataraman to Jessica Azulay on October 17, 2016,²³ the NRC staff informed you of the PRB's revised initial recommendations. The NRC staff also provided the petitioners an opportunity to address the PRB. On November 29, 2016, by e-mail from Paul Gunter to Booma Venkataraman,²⁴ you informed the NRC that you do not request another opportunity to address the PRB.

Therefore, the PRB is rejecting this petition in accordance with Criteria for Petition Evaluation (C)(2) in Management Directive 8.11²⁵, on the basis that the petition raises issues that have already been the subject of NRC staff review, for which resolution has been achieved.

I appreciate you bringing these matters to the attention of the NRC.

Sincerely,



Anne T. Boland, Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

cc: Listserv
Mr. Brian Sullivan, Entergy Nuclear
Operations, Inc.
Mr. Paul Gunter
(paul@beyondnuclear.org)
Mr. Tim Judson (timj@nirs.org)

²¹ Letter from Exelon Generation, to NRC Document Control Desk, "Application for Order Approving Transfer of Renewed Facility Operating License and Proposed Conforming License Amendment," dated August 18, 2016 (ADAMS Accession No. ML16235A081).

²² Letter from William R. Dean, NRC, to Brian R. Sullivan, ENO, "James A. FitzPatrick Nuclear Power Plant—Relaxation of the Schedule Requirements for Order EA-13-109: Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions," dated January 9, 2017 (ADAMS Accession No. ML16336A754).

²³ E-mail from Booma Venkataraman, NRC, to Jessica Azulay, Alliance for a Green Economy, "Gunter et al. 2.206 Petition Requesting Enforcement Action Against James A. FitzPatrick Plant—Revised Initial Recommendations," dated October 17, 2016 (ADAMS Accession No. ML16292A809).

²⁴ E-mail from Paul Gunter, Beyond Nuclear, to Booma Venkataraman, NRC, "Reply to PRB Decision to Reject Petitions Relief FitzPatrick (10 CFR 2.206)," dated November 29, 2016 (ADAMS Accession No. ML16336A208).

²⁵ Management Directive 8.11, "Review Process for 10 CFR 2.206 Petitions," dated October 25, 2000 (ADAMS Accession No. ML041770328).

SUBJECT: G20120172 – CLOSURE LETTER TO GUNTER, ET AL RE: 2.206 PETITION ON CONTAINMENT VENTILATION FOR JAMES A. FITZPATRICK NUCLEAR PLANT DATED MARCH 23, 2017

DISTRIBUTION: G20120172

PUBLIC	RidsOcaMailCenter	RidsNrrDorlPl1	SBailey, NRR
LPL1 R/F	RidsNrrLALRonewicz	RidsAdmMailCenter	RidsNrrPMFitzPatrick
RidsNrrOd	RidsRgn1MailCenter	RidsNrrMailCenter	RidsSecyMailCenter
RidsOpaMail	RidsOgcMailCenter	RidsEdoMailCenter	RidsOeMailCenter
RidsNrrDorl	RidsNrrDpr	RidsNRRJLD	JBowen, OEDO
BVenkataraman, NRR	RidsNrrDprPgcb	RCarpenter, OGC	WReckley, NRO
MBanic, NRR	ABurritt, R-I	RFretz, OE	LCline, R-I

ADAMS Accession Nos.:

Package: ML120960082

Incoming Petition: ML12074A032

Closure Letter: ML17044A072

NUREG/BR-0200, "Public Petition Process, 10 CFR 2.206": ML050900248

Management Directive 8.11: ML041770328

*by e-mail dated

OFFICE	NRR/DORL/LPL1/PM	NRR/DORL/LPL1/LA	NRR/DORL/LPL4/PM*	Tech Editor*
NAME	BVenkataraman	LRonewicz	MBanic	JDougherty
DATE	02/14/2017	02/16/2017	02/22/2017	02/16/2017
OFFICE	RI/DRP/BC*	NRO/DEIA/ARPB*	NRR/JLD/TSD/JERB/BC*	OE/EB*
NAME	ABurritt	WReckley	SBailey	RFretz
DATE	03/02/2017	03/03/2017	03/06/2017	03/08/2017
OFFICE	OGC -NLO*	NRR/DORL/LPL1/BC	NRR/DORL/D	
NAME	RCarpenter	JDanna	ABoland	
DATE	03/14/2017	03/16/2017	03/23/2017	

OFFICIAL RECORD COPY