

**Doerflein, Lawrence**

---

**From:** Russell, Andrea  
**Sent:** Thursday, September 20, 2012 9:22 AM  
**To:** Bickett, Brice; Doerflein, Lawrence; Jennerich, Matthew; Dennig, Robert; Fretz, Robert;  
[REDACTED] (b)(7)(C) Eul, Ryan; Monninger, John; McIntyre, David; Collins, Timothy; Cook,  
William; McCarver, Sammy; Lemoncelli, Mauri; Miranda, Samuel  
**Cc:** Vaidya, Bhalchandra; Thadani, Mohan; Pelton, David; Lee, Samson  
**Subject:** Action: For your Review/Comment: Draft E-mail to Bruce Boger on PRB Initial  
Recommendation (FitzPatrick 2.206:G20120172) (TAC ME8189)  
**Attachments:** G20120172 Bruce draft e-mail on initial recommendation.docx

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Good morning,

Please see the attached draft e-mail for Sam to send to Bruce. Please respond by COB Monday September 24<sup>th</sup>, if you have any edits.

Please let me know if you have any questions.

Thanks,  
Andrea  
2.206 Coordinator

**Subject:** ACTION: PRB Initial Recommendation: G20120172 (2.206 Petition FitzPatrick) - (TAC ME8189): Gunter Et al.

Good morning Samson,

Below is the draft email for you to inform Bruce Boger of the PRB's initial recommendation. After you conduct your review, please forward to Bruce Boger to inform him of the PRB's recommendation. Thank you for your time.

Andrea

**Draft Email (the following will be emailed from Samson Lee to Bruce Boger):**

The purpose of this e-mail is to inform you of the action taken by the Petition Review Board (PRB) on the below linked 2.206 petition for enforcement against FitzPatrick submitted by Paul Gunter et al on March 9, 2012. **We are seeking your concurrence on our initial decision to**

(b)(5)

**PETITION:**

<http://portal.nrc.gov/edo/nrr/dpr/Lists/2206%20Petition%20Assignments/Attachments/35/ML12074A032%20Incoming%20Petition.pdf>

**SUMMARY OF REQUEST:**

On March 9, 2012, as supplemented March 13 and March 20, 2012, Mr. Paul Gunter, et. al., submitted a joint petition to the NRC, under Title 10 of the *Code of Federal Regulations*, Part 2.206, regarding James A. FitzPatrick Nuclear Power Plant (FitzPatrick).

The joint petitioners request that the FitzPatrick operating license be immediately suspended as the result of the undue risk to the public health and safety presented by the operator's reliance on non-conservative and wrong assumptions that went into the analysis of the capability of FitzPatrick's pre-existing ductwork containment vent system. The joint petitioners state that the risks and uncertainty presented by FitzPatrick's assumptions and decisions, in regard to NRC Generic Letter 89-16, as associated with the day-to-day operations of this nuclear power plant now constitute an undue risk to public health and safety. The joint petitioners request that the suspension of the operating license be in effect pending final resolution of a public challenge to the adequacy of the pre-existing vent line in light of the Fukushima Dai-ichi nuclear accident. The joint petitioners do not seek or request that FitzPatrick operators now install the Direct Torus Vent System (DTVS) as it is demonstrated to have experienced multiple failures to mitigate the severe nuclear accidents at Fukushima Dai-ichi.

The joint petitioners request that the NRC take action to suspend the FitzPatrick operating license immediately until the following emergency enforcement actions are enacted, completed, reviewed, and approved by the NRC and informed by independent scientific analysis:

- 1) Entergy Nuclear Operations' FitzPatrick nuclear power plant shall be subject to public hearings with full hearing rights on the continued operation of the Mark I BWR and the adequacy and capability of a pre-existing containment vent which is not a fully hardened vent line as recommended by NRC Generic Letter 89-16. As such, the FitzPatrick operator

uniquely did not make containment modifications and did not install the DTVS, otherwise known as "the hardened vent," as requested by NRC Generic Letter 89-16 and as installed on every other GE Mark I in the US;

- 2) Entergy Nuclear Operations shall publicly document for independent review its post-Fukushima re-analyses for the reliability and capability of the FitzPatrick pre-existing containment vent system as previously identified as "an acceptable deviation" from NRC Generic Letter 89-16 which recommended the installation of the Direct Torus Vent System and as outlined in the NRC Safety Evaluation Report dated September 28, 1992. The publicly documented post-Fukushima analysis shall include the reassessment of all assumptions regarding the capability and reliability of the pre-existing containment venting and specifically address non-conservative assumptions regarding:
  - a) the FitzPatrick cost-benefit analysis used to justify not installing a fully hardened vent system and;
  - b) "unlikely ignition points" as claimed in the FitzPatrick pre-existing vent line system that would otherwise present increased risks and consequences associated with the detonation of hydrogen gas generated during a severe accident.

In the March 20, 2012, supplement to the petition, the joint petitioners state that the Temporary Instruction 2515/183 provides the NRC inspection results in the "Follow-up to the Fukushima Dai-ichi Nuclear Station Fuel Damage Event." The joint petitioners draw attention to what is described at page 8 of the enclosure as an "*apparent beyond design and licensing basis vulnerability*" involving the FitzPatrick operator's refusal to install the DTVS as recommended by NRC in Generic Letter 89-16.

To summarize the supplement, the joint petitioners state that:

- The Commission's March 12, 2012, Order states that "Current regulatory requirement and existing plant capabilities allow the NRC to conclude that a sequence of events such as the Fukushima Dai-ichi accident is unlikely to occur in the US. Therefore, continued operation and continued licensed activities do not pose an imminent threat to public health and safety." The Order further states, "While not required, hardened vents have been in place in U.S. plants with BWR Mark I containments for many years but a wide variance exist with regard to the reliability of the vents."
- The NRC inspection report identifies that FitzPatrick's "existing plant capabilities" and "current procedures do not address hydrogen considerations during primary containment venting" which is further identified as a "current licensing basis vulnerability." The joint petitioners further reiterate that the NRC inspection finding that FitzPatrick's "existing plant capabilities" as assumed by the Order are in fact negated by the finding that "FitzPatrick's current licensing basis did not require the plant to have a primary containment torus air space hardened vent system as part of their Mark I containment improvement program."
- The Commission Order timeline setting December 31, 2016, for installing the reliable hardened vent does not address in a timely way the unique condition of FitzPatrick.

- FitzPatrick uniquely does not have a fully hardened vent system on the vulnerable Mark I containment. As a result, FitzPatrick's current capability is identified with "a beyond design and licensing bases vulnerability, in that FitzPatrick's current licensing basis did not require the plant to have a primary containment torus air space hardened vent system as part of their Mark I containment improvement program." Given that the FitzPatrick unit willfully refused to install the DTVS, the documented discovery of the "licensing basis vulnerability" of its chosen pre-existing vent now uniquely warrants the suspension of operations pending closer scrutiny, public hearings, and full disclosure for its adequacy and capability in the event of a severe accident. The additional identified "vulnerability" and the relatively remote and uncertain mitigation strategy places the public health and safety unduly and unacceptably at risk by the continued day-to-day operations where "current procedures do not address hydrogen considerations during primary containment venting" and will not for nearly five (5) more years.

**BASIS FOR THE REQUEST:**

As a basis for the request, the joint petitioners' state that in light of the multiple failures of the GE Mark I containment and hardened vent systems at the Fukushima Dai-ichi nuclear power station in the days following the March 11, 2011, station black out event, the joint petitions seek the prompt and immediate suspension of the FitzPatrick operations because:

- The GE Mark I BWR pressure suppression containment system is identified as inherently unreliable and likely to fail during a severe accident.
- The capability of FitzPatrick's pre-existing containment vent as approved for severe accident mitigation is not a fully "hardened vent" system.
- The capability of FitzPatrick's pre-existing containment vent as approved relies upon non-conservative and faulty assumptions.
- The capability of FitzPatrick's pre-existing containment vent system uniquely allows for a severe nuclear accident to be released at ground level.
- The Fukushima Dai-ichi nuclear catastrophe dramatically and exponentially changes the FitzPatrick cost-benefit analyses.
- The continued day-to-day reliance upon the significantly flawed pre-existing containment vent system as would be relied upon to mitigate a severe accident at the FitzPatrick Mark I reactor presents an undue risk to the public health and safety.
- The identified containment vulnerability, the non-conservative if not false assumption of "no likely ignition sources" in the pre-existing vent line and the unacceptable consequences of failure of the FitzPatrick pre-existing containment vent place both greater uncertainty and undue risk on public health and safety and are not reasonably justified by arbitrarily assigning a low probability of the occurrence of a severe accident.

(b)(5)

(b)(5)

3. The NRC staff was aware of the conclusions presented in its Safety Evaluation (SE) dated September 28, 1992, for Fitzpatrick with respect to GL 89-16, and considered this information in its overall assessment on whether or not BWR facilities with Mark I and Mark II containments were safe to operate following the events at Fukushima. The NRC inspected the design of the Fitzpatrick hardened wetwell vent system and documented the results in an inspection report (50-333/95-06) issued April 18, 1995. The NRC staff was cognizant of and reviewed the results of inspections performed under TI 183 at FitzPatrick (Report dated May 13, 2011, ADAMS Accession No. ML111330455) following the events at Fukushima. In issuing the March 12, 2012, order, the NRC staff explicitly recognized the wide variance in the reliability of hardened vent designs among Mark I plants. The design at Fitzpatrick is one example of that variance.

(b)(5)

(b)(5)

PRB MEMBERS & ADVISORS:

Samson Lee (PRB Chair – Deputy Director, NRR, Division of Risk Assessment)  
Bhalchandra Vaidya (Petition Manager – NRR, Division of Operating Reactor Licensing)  
Sam Miranda (Senior Reactor Systems Engineer – NRR, Division of Safety Systems,  
Reactor Systems Branch)

Robert Dennig	(Branch Chief – NRR, Division of Safety Systems, Containment and Ventilation Branch)
Robert Fretz	(Senior Project Manager – NRR, Japan Lessons Learned Project Directorate, Projects Management Branch)
John Monninger	(Associate Director – NRR, Japan Lessons Learned Project Directorate)
Andrea Russell	(Agency 2.206 Coordinator – NRR, Division of Policy and Rulemaking)
David Pelton	(Branch Chief – NRR, Division of Policy and Rulemaking, Generic Communications Branch)
Brice Bickett	(Senior Project Manager – Region 1, Branch 2, Division of Reactor Projects)
Lawrence Doerflein	(Branch Chief – Region 1, Branch 2, Division of Reactor Safety)
Ryan Eul	(Enforcement Specialist – Office of Enforcement)
Mauri Lemoncelli	(Senior Attorney – Assistant General Counsel – Materials Litigation and Enforcement – Office of General Counsel)

(b)(5)

Table (This table summarizes each issue for the following criteria).

Issue No.	Specific Issue Raised	Does this meet criteria for review under 2.206 process?	Recommendation
1	<p>FitzPatrick operating license be immediately suspended as the result of the undue risk to the public health and safety presented by <u>the operator's reliance on non-conservative and wrong assumptions that went into the analysis of the capability of FitzPatrick's pre-existing ductwork containment vent system</u>. The risks and uncertainty presented by FitzPatrick's assumptions and decisions, in regard to NRC Generic Letter 89-16, as associated with the day-to-day operations of this nuclear power plant now constitute an undue risk to public health and safety.</p>		(b)(5)

<i>Issue No.</i>	<i>Specific Issue Raised</i>	<i>Does this meet criteria for review under 2.206 process?</i>	<i>Recommendation</i>
2	The suspension of the operating license be in effect pending final resolution of a public challenge to the adequacy of the pre-existing vent line in light of the Fukushima Dai-ichi nuclear accident.		
3	The joint petitioners do not seek or request that FitzPatrick operators now install the Direct Torus Vent System (DTVS) Recommended by GL89-16, as it is demonstrated to have experienced multiple failures to mitigate the severe nuclear accidents at Fukushima Dai-ichi.		(b)(5)
4	FitzPatrick be subject to public hearings with full hearing rights on the continued operation of the Mark I BWR and the adequacy and capability of a pre-existing containment vent which is not a fully hardened vent line as recommended by NRC Generic Letter 89-16. As such, the FitzPatrick operator uniquely did not make containment modifications and did not install the DTVS, otherwise known as "the hardened vent," as requested by NRC Generic Letter 89-16 and as installed on every other		

Issue No.	Specific Issue Raised	Does this meet criteria for review under 2.206 process?	Recommendation
	GE Mark I in the US;		
5	<p>FitzPatrick shall publicly document for independent review its post-Fukushima re-analyses for the reliability and capability of the FitzPatrick pre-existing containment vent system as previously identified as "an acceptable deviation" from NRC Generic Letter 89-16 which recommended the installation of the Direct Torus Vent System and as outlined in the NRC Safety Evaluation Report dated September 28, 1992. The publicly documented post-Fukushima analysis shall include the reassessment of all assumptions regarding the capability and reliability of the pre-existing containment venting and specifically address non-conservative assumptions regarding:</p> <p>a) the FitzPatrick cost-benefit analysis used to justify not installing a fully hardened vent system and;</p>		(b)(5)

Issue No.	Specific Issue Raised	Does this meet criteria for review under 2.206 process?	Recommendation
	<p>b) "unlikely ignition points" as claimed in the FitzPatrick pre-existing vent line system that would otherwise present increased risks and consequences associated with the detonation of hydrogen gas generated during a severe accident.</p>		(b)(5)

Issue No.	Specific Issue Raised	Does this meet criteria for review under 2.206 process?	Recommendation
6	<p>The Temporary Instruction 2515/183 provides the NRC inspection results in the "Follow-up to the Fukushima Dai-ichi Nuclear Station Fuel Damage Event." The joint petitioners draw attention to what is described at page 8 of the inspection report as an "<i>apparent beyond design and licensing basis vulnerability</i>" involving the FitzPatrick operator's refusal to install the DTVS as recommended by NRC in Generic Letter 89-16.</p>		
7	<p>The NRC inspection report [per TI-2515/183] identifies that FitzPatrick's "existing plant capabilities" and "current procedures do not address hydrogen considerations during primary containment venting" which is further identified as a "<u>current licensing basis vulnerability</u>." The joint petitioners further reiterate that the NRC inspection finding that FitzPatrick's "existing plant capabilities" as assumed by the Order are in fact negated by the finding that "FitzPatrick's current licensing basis did not require the plant to have a primary containment torus air space hardened vent system as part of their Mark I containment improvement program."</p>		(b)(5)

Issue No.	Specific Issue Raised	Does this meet criteria for review under 2.206 process?	Recommendation
8	The Commission Order timeline setting December 31, 2016, for installing the hardened vent Order does not address, in a timely way, the unique condition of the FitzPatrick nuclear power plant.		(b)(5)
9	The FitzPatrick nuclear power plant uniquely does not have a fully hardened vent system on the vulnerable Mark I containment. As a result, FitzPatrick's current capability is identified with <u>"a beyond design and licensing bases vulnerability,</u> in that FitzPatrick's current licensing basis did not require the plant to have a primary containment torus air space hardened vent system as part of their Mark I containment improvement program."		

Issue No.	Specific Issue Raised	Does this meet criteria for review under 2.206 process?	Recommendation
10	<p>Given that the FitzPatrick unit willfully refused to install the DTVS, the documented discovery of the <u>"licensing basis vulnerability"</u> of its chosen pre-existing vent now uniquely warrants the suspension of operations pending closer scrutiny, public hearings, and full disclosure for its adequacy and capability in the event of a severe accident.</p>		(b)(5)

Issue No.	Specific Issue Raised	Does this meet criteria for review under 2.206 process?	Recommendation
			(b)(5)

Issue No.	Specific Issue Raised	Does this meet criteria for review under 2.206 process?	Recommendation
			(b)(5)
11	<p>The additional identified "vulnerability" and the <u>relatively remote and uncertain mitigation strategy</u> places the public health and safety unduly and unacceptably at risk by the continued day-to-day operations where "current procedures do not address hydrogen considerations during primary containment venting" and will not for nearly five (5) more years.</p>		

Issue No.	Specific Issue Raised	Does this meet criteria for review under 2.206 process?	Recommendation
			(b)(5)