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FINAL REPLY:

Paul Gunter  
Nuclear Information and Resource Service

TO:

Chairman Diaz

FOR SIGNATURE OF : \*\* PRI \*\* CRC NO: 03-0395

Chairman

DESC:

ROUTING:

Concerns the appropriate use of R.G. 1.74...Davis  
Besse to operate beyond the reporting deadline  
of 12/31/01, per Bulletin 2001-01

Travers  
Paperiello  
Kane  
Norry  
Dean  
Burns/Cyr  
Dyer, RIII  
Thadani, RES

DATE: 06/23/03

ASSIGNED TO: CONTACT:

NRR

Collins

SPECIAL INSTRUCTIONS OR REMARKS:

OFFICE OF THE SECRETARY  
CORRESPONDENCE CONTROL TICKET

Date Printed: Jun 23, 2003 14:10

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ACTION OFFICE: EDO

AUTHOR: Paul Gunter (NIRS)  
AFFILIATION:  
ADDRESSEE: CHRM Nils Diaz  
SUBJECT: Concerns the appropriate use of R.G. 1.174 ...Davis-Besse to operate beyond the reporting  
deadline of Dec. 31, 2001, per Bulletin 2001-01

ACTION: Signature of Chairman  
DISTRIBUTION: Chrm, Comrs, RF

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## **Nuclear Information and Resource Service**

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June 20, 2003

Commissioner Nils Diaz, Chairman  
United States Nuclear Regulatory Commission  
Washington, DC 20555

By FAX: 301 415 1672

**Regarding Commission Response of June 09, 2003 Acknowledging the Appropriate  
Use of Regulatory Guide 1.174 in Risk-Informing the Decision to Allow  
Davis-Besse to Operate Beyond the  
Reporting Deadline of December 31, 2001 per Bulletin 2001-01**

Dear Commissioner Diaz:

Thank you for your June 09, 2003 response to Nuclear Information and Resource Service (NIRS) letter of February 14, 2003 clarifying the Nuclear Regulatory Commission's (NRC) position on the appropriateness of NRC staff's use of Regulatory Guide 1.174 in risk-informing its evaluation of First Energy's request to operate Davis-Besse nuclear generating station beyond the reporting deadline of December 31, 2001 per NRC Bulletin 2001-01, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles."

We concur with your response that "the staff appropriately employed the integrated risk-informed decision making approach described in RIS 2001-02 and RG 1.174, consistent with Commission policy." As you will recall, this was the focus of our comments made before the Commissioners' Briefing on February 04, 2003 regarding the Davis-Besse Lessons Learned Task Force. At that briefing, then Commission Chairman Richard Meserve made statements which contradicted both the intent of our presentation and the above stated adopted Commission policy.

The Chairman's response invites NIRS to return to the questions that remain unanswered both by the current Commission response and the Davis-Besse Lessons Learned Task Force Final Report.

I would first like offer some background material and a correction to the Commission response of June 10, 2003. As stated "In response to NRC Bulletin 2001-01 [Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles], the licensee for Davis-Besse submitted a justification for operation during the period from December 31, 2001 to February 16, 2002."

In fact, FirstEnergy Nuclear Operating Company (FENOC) in its September 2001 response to Bulletin 2001-01 originally requested to operate Davis-Besse through the end of March 2002 in order to complete a full operational cycle. The bulletin requested inspection reports before December 31, 2001 or utility justification to operate beyond that date. NRC staff reacted to the FENOC request through the agency's integrated risk-informed approach as provided by Regulatory Issue Summary (RIS) 2001-02 and Regulatory Guide (RG) 1.174. Using the regulatory guide's five attributes derived from traditional engineering practices and risk information, the staff evaluated Davis-Besse's requested extended operation. Using Regulatory Guide 1.174 the staff concluded that the request was not acceptable because of the level of identified risk posed to public safety. The staff initiated a draft Order sometime in the September 2001 timeframe to shutdown Davis-Besse by December 31, 2001 for the requested inspection of the reactor pressure vessel head penetration nozzles.<sup>1</sup>

The draft Order was finalized and signed by the Director of Nuclear Reactor Regulation (NRR), forwarded to the Executive Director of Operations and transmitted to the Commissioners on November 21, 2001 to be issued to the utility no sooner than five working days.<sup>2</sup> However, the Order was never issued to FirstEnergy.

Instead, on November 26<sup>th</sup> in a conference call with FirstEnergy, NRC senior managers and staff it was "indicated that they [FirstEnergy] could shut down for refueling on February 16<sup>th</sup> at the earliest and would prefer to couple the CRDM inspections with the RFO [refueling outage]."<sup>3</sup> On November 27<sup>th</sup> FirstEnergy emailed materials to NRC staff including compensatory actions intended to be taken by the company as risk reduction actions.

On November 28, 2001, following a meeting between FirstEnergy representatives and NRC staff to discuss the Davis-Besse inspections, NRC's Director of the Office of Nuclear Reactor Regulation Samuel Collins talked with FirstEnergy President where "Saunders said Collins may have told him prior to his departure from NRC Headquarters on November 28, 2001, that NRC would accept the compensatory measures offered by FENOC [FirstEnergy] and would allow DBNPS [Davis-Besse] to continue operations."<sup>4</sup>

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<sup>1</sup> FOIA 2002-0229, Appendix B-29, "Basis for Order to Perform Adequate Inspection of CRDM Nozzles for SCC," file from Steve Long, U.S. NRC, September 19, 2001.

<sup>2</sup> FOIA 2002-0229, Appendix G-08, "Issuance of Order Regarding Response to Nuclear Regulatory Commission (NRC) Bulletin 2001-01 'Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles,'" William Travers, EDO Memorandum to Chairman McServe, Commissioner Dicus, Commissioner Diaz, Commissioner McGaffigan, Commissioner Merrifield, U.S. NRC, November 21, 2001.

<sup>3</sup> FOIA 2002-0229, Appendix F-9, Email "Re: Davis-Besse Order," Brian McCabe, Office of the Commissioners, to Stacey Rosenberg, Executive Director of Operations, U.S. NRC, November 26, 2001.

<sup>4</sup> Office of the Inspector General, U.S. NRC, Case No. 02-035, Report of Interview with Robert Saunders, President, First Energy Nuclear Operating Company, October 23, 2002, p. 2.

In an email from John Zwolinski (NRR) to Lawrence Burkhart (NRR) dated November 30, 2001, Mr. Burkhart explains to Mr. Zwolinski the five principles of the regulatory guide in advance of the Commissioners' Technical Assistants (TA) Briefing on acceptance of the compromise date as "The 5 safety principles that we discussed in the order and supported the basis for issuing the order. Since we are no longer issuing an order, it was decided that we would discuss how our assessment of these 5 principles has changed (Jack [Strosnider] suggested that we include this discussion in our briefing to the EDO and he will address.)"<sup>5</sup>

NIRS submits that despite the offered compensatory actions the attached NRC staff's re-evaluation of the regulatory guide's five principles as presented to the Executive Director of Operations on November 29, 2003 and to the Commissioners' Technical Assistants on November 30, 2001 on the acceptance of the compromise date of February 16, 2002, indicates that staff has essentially not changed its assessment of the risk associated with Davis-Besse's operation beyond December 31, 2001.<sup>6</sup> As I presented to the Commission on February 04, 2003, the staff's concluding slide unequivocally shows that the guidance of Regulatory Guide 1.174 was still not met.

The slide indicates that:

- 1) If inspections were performed, the regulations (technical specifications and General Design Criteria) would not be met.
- 2) Defense-in-depth is not maintained because one barrier is likely degraded.
- 3) Safety margins are likely reduced.
- 4) Only a small increase in core damage frequency (CDF) results.  
[NIRS notes additional NRC documentation provided on November 30<sup>th</sup> on Davis-Besse that found "Although operation in this condition could result in ΔCDF and ICDP (Incremental Core Damage Probability) values that are above the normally accepted guidelines of RG 1.174 and RG 1.182, the analysis also indicates that the consequence of such an event would not constitute an undue risk to the health and safety of the public."]<sup>7</sup>
- 5) The basis of risk measurement will not occur until inspection is performed.

The staff's engineering evaluations as presented above on November 30, 2001 do not appear to provide a significant improvement over initial the staff's Regulatory Guide 1.174 evaluation which determined that 4 of 5 of the risk attributes non-acceptable and used as the basis for the Order to shut down Davis-Besse for inspections by December 31, 2001. Additional NRC documentation indicates that

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<sup>5</sup> FOIA 2002-0229, Appendix D-54, "Re: Commissioners' TA Brief on Friday," Email from Zwolinski to Burkhart, U.S. NRC, November 30, 2001.

<sup>6</sup> FOIA 2002-0229, Appendix B-175, B-176, B-177, "Slides: Status of NRC Staff Review of FENOC Bulletin 2001-01 Response for Davis-Besse, brief to Commissioners' TAs," U.S. NRC, November 30, 2001.

<sup>7</sup> FOIA 2002-0229, Appendix F-43, Nuclear Regulatory Commission Report dated November 30, 2001, "Daily Status Report Re: Unresolved Response to Bulletin 2001-01 for High Susceptible Plants and Those Plant That Have Experienced VHP Nozzle Cracking," p.2.

the staff did not have confidence in the quality or reliability of risk reduction encompassed by the compensatory actions.

While your response of June 09, 2003 now clarifies that the staff appropriately employed the risk-informed integrated evaluation per Regulatory Guide 1.174, the question remains why the risk information that it provided was ultimately ignored on the day of the decision? Additional there is the question why the NRC Davis-Besse Lessons' Learned Task Force did not address this and other conspicuous omissions in its Final Report.

NIRS therefore provides the following questions:

1) In implementing the proposed change through the risk-informed decision-making process, Regulatory Guide 1.174 establishes that the licensee "meet a set of key principles" defined by traditional engineering evaluations and supported by probabilistic risk assessment insights. **The regulatory guide specifies that the acceptability of the proposed changes should be evaluated in an integrated fashion that ensures that all the principles are met.**<sup>8</sup> NIRS understands this to mean that all five principles must be satisfied in order for the change, in this case operation of Davis-Besse beyond the December 31<sup>st</sup> inspection date per Bulletin 2001-01, to be acceptable.

NIRS additionally notes that a footnote to Regulatory Guide 1.174 (July 1998 Rev. 0) for the acceptability requirements states "One important element of integrated decision-making can be the use of an 'expert panel.' Such a panel is not a necessary component of risk-informed decision-making; but when it is used, the key principles and associated decision criteria presented in this regulatory guide still apply and must be shown to have been met or to be irrelevant to the issue at hand."<sup>9</sup>

What risk-informed or other standard was applied to evaluate and allow the extended operation of Davis-Besse given that four out of the five, and arguably five out of five, key principles of the appropriate regulatory guide were not clearly met at the time of the decision?

2) The Davis-Besse Lesson's Learned Task Force does not reference nor assess the role of the staff's engineering evaluations and risk assessments in using Regulatory Guide 1.174 in the formulation of the Order. The task force final report does not address or analyze the treatment of these key principles contained within the regulatory guide and the requirement that all of the principles be met in order to accept any proposed change. The task force final report does not acknowledge nor address the basis for the abandonment of the staff's critical public safety risk

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<sup>8</sup> Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment In Risk Informing Decisions on Plant-Specific Changes to the Licensing Basis," U.S. NRC, July 1998, Section: An Acceptable Approach To Risk Informed Decision-making, p. 1.174-6. and Revision 1, November 2002, p. 1.174-8.

<sup>9</sup> Ibid.

evaluation using the regulatory guide in the final acceptance of the compromise operational date and the abandonment of the Order.

Can you please provide an explanation for the task force's omission of this critical information and analysis from its Final Report?

3) Contrary to NRC staff summation of Regulatory Guide 1.174 engineering and risk evaluations as presented on November 29<sup>th</sup> and November 30<sup>th</sup>, 2001, can you please provide the documentation that NRC management used in its December 03, 2002 Safety Evaluation in retrospect over a year later finding that those same five principles of the regulatory guide justified Davis-Besse's extended operation until February 16, 2002?

NIRS appreciates your attention to answering these questions that are pivotal to public trust and confidence in the NRC decision-making processes based in Regulatory Guide 1.174 as it affects the risk to the public health and safety.

Sincerely,



Paul Gunter, Director  
Reactor Watchdog Project  
Email: pgunter@nirs.org

#### REFERENCE DOCUMENTS

- 1) "Briefing on Lessons Learned Davis-Besse Vessel Head Degradation, Rockville, MD, US Nuclear Regulatory Commission, Transcript, February 04, 2003  
<http://www.nrc.gov/reading-rm/doc-collections/commission/tr/2003/20030204.pdf>
- 2) Letter from Paul Gunter, NIRS, to Commission Chair Richard A. Meserve, USNRC, February 14, 2003, ADAMS Accession # ML030550099
- 3) Letter from Commission Chair Nils J. Diaz, USNRC, to Paul Gunter, NIRS, June 09, 2003, ADAMS Accession # ML030730221

#### ATTACHMENT

"Status of NRC Staff Review of FENOC's Bulletin 2001-01 Response For Davis-Besse, Brief for the Commissioners' TA," November 30, 2001, U.S. NRC, FOIA 2002-0229, Appendix B-176, Excerpt of Summation Slide, RG 1.174.

CC:

U.S Senator George Voinovich  
U.S. Senator Harry Reid  
U.S. Representative Dennis Kucinich  
U.S. Representative Marcy Kaptur  
U.S. Representative Edward Markey  
U.S. Representative John Dingell  
U.S NRC Office of the Inspector General

U.S General Accounting Office  
David Lochbaum, UCS  
James Riccio, Greenpeace



# STATUS OF NRC STAFF REVIEW

OF FENOC'S BULLETIN 2001-01 RESPONSE FOR  
DAVIS-BESSE

- 
- Brief for the Commissioners' TAs
  - November 30, 2001
- 

B-176





# RG 1.174 SAFETY PRINCIPLES

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- Current Regulations are met
    - ▶ It is likely that, if inspections were performed today, current regulations would not be met with respect to TS requirements and GDC
  - Defense-in-depth philosophy is maintained
    - ▶ It is likely that one of 3 barriers is degraded
    - ▶ However, Davis-Besse has a large, dry containment (conditional LERP is  $1.5E-03$ )
  - Sufficient safety margins are maintained
    - ▶ It is likely that safety margins are reduced
  - Only a small increase in CDF results
    - ▶ Incremental  $\Delta CDF$  (no comp measures) is  $1.1E-06/ry$  to  $1.3E-04/ry$
    - ▶ Baseline CDF is  $x E-05/ry$  (not including external events)
  - The basis of risk measurement is monitored using performance measurement strategies
    - ▶ Will notr occur until inspection is performed
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# Nuclear Information and Resource Service

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## FAX COVER SHEET

DATE: 06-20-2003 No. of pages following: 5

TO: Commission Dir.

FAX #: \_\_\_\_\_

FROM: Paul Gustin

COMMENTS: