



# Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

February 10, 2003

Mr. John A. Grobe, Director  
Division of Reactor Safety  
United States Nuclear Regulatory Commission  
801 Warrenville Road  
Lisle, IL 60532-4351

**SUBJECT: QUESTIONS FOR DAVIS-BESSE MANUAL CHAPTER 0350 PANEL**

Dear Mr. Grobe

The Union of Concerned Scientists has been monitoring Davis-Besse fairly closely over much of the past year. Many of the questions and concerns we have raised have been answered or resolved. For example, our concern about potential micro-biological induced corrosion of the containment's steel liner was resolved when FirstEnergy sampled the standing water contacting the liner. And our GSI-191 concern was resolved when FirstEnergy modified the containment sump screen and also took measures to better control potential debris inside containment.

Despite progress, some questions and concerns remain. This letter describes those remaining issues, which I intend to raise during the 0350 Panel public meeting in Port Clinton tomorrow evening. These issues fall into four categories:

- o Licensee event reports (LERs)
- o Inadequate reactor vessel hydrostatic test procedure
- o Inaccurate/incomplete probabilistic risk assessment
- o 0350 panel termination criteria

These categories are detailed in the following sections.

## **Licensee Event Reports (LERs)**

Plant owners are required by federal regulation 10 CFR 50.72 to submit licensee event reports (LERs) to the NRC on non-conformances. As indicated in the following table, FirstEnergy submitted a grand total of eight (8) LERs to the NRC during 2002 on non-conformances at Davis-Besse.

Date	LER No.	Subject
<b>2000 LERs</b>		
02/21/2000	2000-001	Failure to Perform Technical Specification Action With Switchyard Circuit Inoperable Due to Inadequate Procedure
04/28/2000	2000-002	Main Steam Safety Valve Setpoints Greater Than Technical Specification Allowable Values
05/24/2001	2002-002 Rev. 1	Main Steam Safety Valve Setpoints Greater Than Technical Specification Allowable Values
05/11/2000	2000-003	Loss of Auxiliary Feedwater Pump Turbine Main Steam Supply Train

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Date	LER No.	Subject
		Separation Due to Check Valve Failure
05/20/2000	2000-004	Personnel Error During Bus Transfer Testing Results in Loss of Offsite Power
07/07/2000	2000-005	Main Steam Drain Valve Left Open Rendering Auxiliary Feedwater Pump Turbine Inoperable
01/02/2001	2000-S01	Unescorted Access Improperly Granted to Contract Employee Due to Misfiling of Derogatory Information
<b>2001 LERs</b>		
none		
<b>2002 LERs</b>		
04/11/2002	2002-001	Main Steam Safety Valve Setpoints Greater Than Allowable Values
04/29/2002	2002-002	Reactor Coolant System Pressure Boundary Leakage Due to Primary Water Stress Corrosion Cracking of Control Rod Drive Mechanism Nozzles and Reactor Pressure Vessel Head Degradation
05/09/2002	2002-003	Fuel Movement in Spent Fuel Pool Without Required Door Attendant
07/22/2002	2002-004	Containment Isolation Closure Requirements for RCP Seal Injection Valves MU66A-D
11/04/2002	2002-005	Potential Clogging of the Emergency Sump Due to Debris in Containment
11/05/2002	2002-006	Emergency Diesel Generator Exhaust Piping Not Adequately Protected From Potential Tornado-Generated Missiles
12/11/2002	2002-007	Potential Leakage of Incore Monitoring Instrumentation Nozzles at Bottom of Reactor Vessel [Reported voluntarily under 10 CFR 50.9]
12/31/2002	2002-008	Containment Air Coolers Collective Significance of Degraded Conditions

Of these eight LERs, one (2002-007) was a voluntary report submitted under 10 CFR 50.9 instead of 10 CFR 50.72, one (2002-001) was a repetition of an instrumentation problem previously reported to the NRC in 2000, and one (2002-003) was a personnel error during fuel movements. Thus, only five (5) LERs involve equipment conditions identified during the ongoing outage at Davis-Besse.

The five LERs seems "lean" compared to the dozens of LERs submitted by the owners of the D. C. Cook nuclear plant in Michigan and the Millstone nuclear plant in Connecticut during their recent extended outages. For example, there were over two dozen LERs submitted on D. C. Cook in 1999.<sup>1</sup>

D. C. Cook and Millstone have two operating reactors compared to the single operating reactor at Davis-Besse and therefore have more opportunity for non-conforming conditions. But FirstEnergy and the NRC want the public to believe that the safety systems have been rigorously "scrubbed" to ensure conformance with all applicable design and licensing requirements. Similar scrubs at Millstone and D. C. Cook revealed literally hundreds of problems. When these hundreds of problems were evaluated for reportability under 10 CFR 50.72, dozens of problems were reported to the NRC.

But only five problems were reported for Davis-Besse in 2002 — fewer LERs than FirstEnergy submitted to the NRC in 2000, back when the company conceded it had the wrong focus on safety and a higher threshold on problem reporting.

The scant Davis-Besse LER volume compared to the Millstone and D. C. Cook LER volumes begs two questions:

<sup>1</sup> Letter dated February 25, 2000, from A. Christopher Bakken III, Site Vice President, Indiana Michigan Power Company, to United States Nuclear Regulatory Commission, "LER 315/1999-029-01, "Lack of Verbatim Compliance Results in Violations of Technical Specifications.""

1. Were the system assessments at Davis-Besse as rigorous as those conducted at Millstone and D. C. Cook in flushing out heretofore unidentified non-conforming conditions?
2. Did FirstEnergy properly evaluate problems raised during the system assessments at Davis-Besse for reportability under 10 CFR 50.72?

The low LER total at Davis-Besse could very well be due to legitimate reasons. But it might be attributed to superficial system assessments that failed to reveal non-conformances and/or to flawed reportability evaluations. The NRC should determine if the low number of LERs for Davis-Besse is for the right reasons.

UCS is aware of at least one condition at Davis-Besse with the potential for reportability under 10 CFR 50.72:

Technical Specification 3.5.2 requires trisodium phosphate dodecahydrate (TSP) inside the Davis-Besse containment to neutralize boric acid and maintain the post-LOCA sump pH to no less than 7. Technical Specification Surveillance Requirement 4.5.2.d.4 requires a minimum amount of 290 cubic feet of TSP. But Davis-Besse operated for years with borated water leaking from the reactor coolant pressure boundary. The boric acid accumulated on the reactor vessel head, on the containment air cooler coils, on the containment air radiation monitor filters, and elsewhere throughout the containment to the tune of hundreds of pounds. This extensive, pre-existing boric acid inside containment in all likelihood meant that the plant was in violation of Tech Spec 3.5.2. Yet, no LER has been submitted to date.

#### **Looking for Leaks in All the Wrong Places**

In a letter dated July 15, 2002, to you and Dr. Edwin Hackett of the NRC's Lessons Learned Task Force, UCS questioned why the hydrostatic test allegedly performed of reactor vessel penetrations and welds at Davis-Besse on June 5, 2000. FirstEnergy estimated that CRDM nozzle #3 was leaking through-wall by the time of the June 5, 2000, hydrostatic test. CRDM nozzle #3 is a reactor vessel penetration, yet its leak was not identified during the hydrostatic test. FirstEnergy must have been looking for leaks in the wrong places during this hydrostatic test.

FirstEnergy plans another hydrostatic test. Has the NRC confirmed that the company's test won't once again miss leaks?

#### **Risk-informed Regulation?**

The NRC and the nuclear industry are moving farther and farther down the road towards risk-informed regulation. Yet the plant-specific risk assessments that are the foundation for risk-informed regulation are flawed. For example, a primary reason for the NRC taking months and months and months to figure out which color to assign to the damaged reactor vessel head at Davis-Besse is that risk assessments assume it is impossible for the reactor vessel heads to become damaged. The Significance Determination Process is trying to determine the significance of an actual event deemed to be impossible. Quite a challenge.

In a letter dated July 3, 2002, to you and Dr. Edwin Hackett of the NRC's Lessons Learned Task Force, UCS asked if the NRC would permit FirstEnergy to restart without revising the Davis-Besse risk assessment to account for the "impossible" having happened. Has the Davis-Besse probabilistic risk assessment been revised to account for reactor vessel damage?

**0350 Panel Termination Criteria**

As you well know having also been its Chairman, the 0350 Panel for the D. C. Cook nuclear plant remained in place after restart. That 0350 Panel terminated its efforts after the performance indicators for the reactor oversight process were reactivated and valid once more and the NRC's inspections verified adequate performance.

UCS has heard and seen statements by you and other NRC officials that the Davis-Besse 0350 Panel will remain in place if that plant restarts. Because the conditions between D. C. Cook and Davis-Besse are significantly different. UCS hopes that the NRC will also apply different termination criteria for the 0350 Panel.

The D. C. Cook nuclear plant was shut down for an extended period for extensive repairs to equipment and administrative processes. Davis-Besse is similar in this respect. But the NRC did not charter a Lessons Learned Task Force to probe its handling of D. C. Cook and therefore did not have forty nine (49) recommendations to resolve internally as it does for Davis-Besse. Many of those 49 recommendations directly or indirectly affect the reactor oversight process.

UCS recommends that the Davis-Besse 0350 Panel not terminate its efforts until both the performance indicators and inspection findings demonstrate adequate performance (i.e., the D. C. Cook precedent) and all recommendations impacting the reactor oversight process have been implemented. UCS recognizes that these termination criteria might entail Davis-Besse getting more NRC oversight than other operating reactors in Region III and the rest of the country. Perhaps, but the NRC owes the people of northwestern Ohio something for having shorted them of even basic, minimum oversight at Davis-Besse between 1999 and 2002. It would be unfair to the people of northwestern Ohio for the NRC to disband its 0350 Panel in favor of the reactor oversight process until that process has been corrected for all of the Davis-Besse lessons learned.

Sincerely,

A handwritten signature in black ink, appearing to read "David A. Lochbaum". The signature is fluid and cursive, with the first name "David" and last name "Lochbaum" clearly distinguishable.

David Lochbaum  
Nuclear Safety Engineer  
Washington Office