Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

Nuclear Pinocchio

David Lochbaum
Director, Nuclear Safety Project

June 18, 2007

Nuclear Pinocchio

People associate Pinocchio with his penchant for lying.

Pinocchio was also, at least initially, a marionette who's actions, and inactions, were controlled by whoever held the puppet strings.

This 2.206 petition is all about who's lying and who's controlling the puppet strings.

Petition's "Asks"

1) **Immediate shut down of Davis-Besse until NRC completes an independent review of Exponent report**

2) **If NRC's independent review concludes report is valid, shut down of all other PWRs until "new" issues are resolved (Davis-Besse could restart)**

3) **If NRC's independent review concludes report is not valid, revoke FirstEnergy's license to operate Davis-Besse**

PRB's Responses

1) No

2) No

3) No

Petitioner Pleased with Responses

1) Nope

2) Nope

3) Nope

Pinocchio had a long nose.

NRC has the wrong no's.

NRC's "Independent Review"

§ 50.9 Completeness and accuracy of information.

(a) Information provided to the Commission by an applicant for a license or by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material respects.

By letter dated March 20, 2007, and numbered Serial Number 3331, the Davis-Besse licensee provided a copy of the Exponent report to the Commission.

The "independent review" UCS sought was merely for the NRC to determine if the report conforms with this federal regulation.

NRC's "Independent Review"

Weeks <u>after</u> our petition was submitted, NRC demanded info from FENOC about the Exponent report.

UCS cannot believe these NRC actions will not include a 50.9 determination about the Exponent report. Why would NRC demand info about a report for which the agency has no opinion as to its completeness and accuracy?

May 14, 2007

EA-07-123

Mr. Anthony Alexander
Chief Executive Officer
FirstEnergy Nuclear Operating Company
76 South Main Street
Akron, OH 44308

SUBJECT: DEMAND FOR INFORMATION

Dear Mr. Alexander:

The enclosed Demand for Information (DFI) is being issued in response to information provided by FirstEnergy Nuclear Operating Company (FENOC) relative to its re-analysis of the timeline and root causes for the 2002 Davis-Besse reactor pressure vessel head degradation event.

The Nuclear Regulatory Commission (NRC) requires information in order to understand and determine the appropriateness of FENOC's actions following its receipt of a report prepared by its contractor, Exponent Failure Analysis Associates and Altran Solutions Corporation (Exponent), that provided a re-analysis of the timeline and root causes of the 2002 Davis Besse reactor pressure vessel head degradation event (2002 event). In particular, given the significant changes in the timelines, the NRC needs further detailed and specific information relative to the timing of FENOC's review of the Exponent Report and the factors it considered when determining if the conclusions should be communicated to the NRC.

The NRC also needs information to understand the depth and completeness of FENOC's evaluation of the assumptions, methods, and conclusions of the Exponent Report. In particular, the NRC requires detailed and specific information with regard to differences between the assumptions, methods, and conclusions of the Exponent Report and the technical and programmatic root cause reports previously developed by FENOC relative to the 2002 event. This information is also needed for the NRC to determine the appropriateness of FENOC's assessment of the continued adequacy of corrective actions taken in response to the 2002 event.

NRC's "Independent Review"

U.S. NUCLEAR REGULATORY COMMISSION

REPORT TO CONGRESS ON THE NATIONAL ACADEMY OF SCIENCES STUDY ON THE SAFETY AND SECURITY OF COMMERCIAL SPENT NUCLEAR FUEL STORAGE

March 2005

Recommendation 2C - Although the committee did not specifically investigate the effectiveness and adequacy of improved surveillance and security measures for protecting stored spent nuclear fuel, an assessment of current security measures should be performed by an independent organization.

Response - The NRC agrees that independent assessment of the effectiveness, adequacy, and efficiency of programs, including security program requirements for protecting SNF is desirable. The NRC, as an independent regulatory agency, evaluates the performance of licensees in implementing these security requirements. The NRC is responsible for regulating licensees' performance in protecting spent fuel, not for directly protecting spent fuel itself.

NRC's "Independent Review"

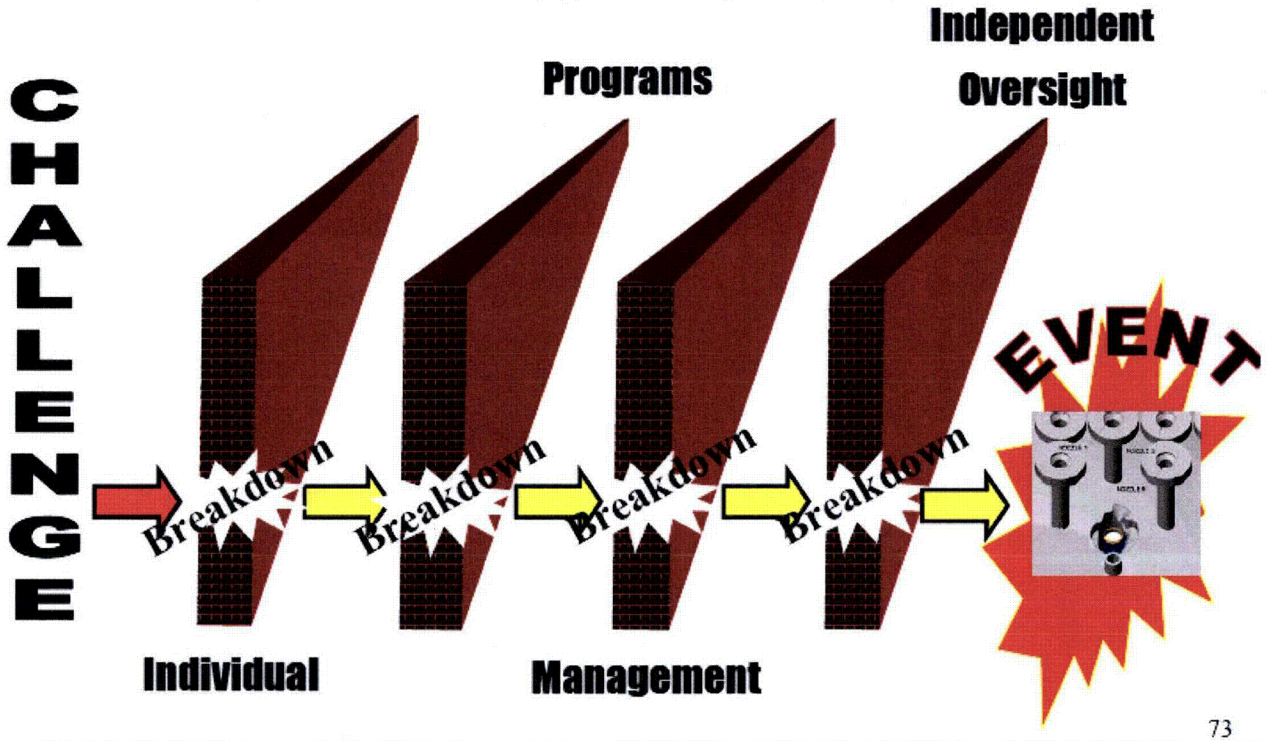
UCS sought to have NRC, as an independent regulatory agency, determine if one of its regulations (numberly 10 CFR 50.9) had been violated by one of its licensees (namely FirstEnergy).

In other words, was FirstEnergy lying *then* or are they lying *now*?

Back then, FENOC said:

FirstEnergy

Barriers Demonstrating FENOC'S Strong Safety Focus



Now, FENOC says:

2. Principal Conclusions and Opinions

We have reached the following overall conclusion based on the work described in detail in the subsequent sections of this report.

The large wastage cavity discovered in March 2002 at control rod drive mechanism (CRDM) Nozzle 3 in the Davis-Besse reactor pressure vessel (RPV) head was caused by a unique, unexpected, and unforeseeable combination of high nozzle material susceptibility to primary-water stress corrosion cracking (PWSCC), high residual stresses from welding, rapid and non-linear crack growth, and development of thermal hydraulic conditions that resulted in accelerated attack of the RPV head alloy steel material. This event of the moment occurred around October/November 2001 when the leak rate from an existing J-groove weld crack combined with the leak rate from the CRDM Nozzle 3 crack to raise the total leakage rate to 0.16 gpm (84,000 gallons /year). This leak rate caused rapid catastrophic material removal from the RPV head. This event was not only unexpected, but was not foreseen or predicted by any of the extensive prior experience with boric acid corrosion, or from any of the inspection and analysis of CRDM cracking in nuclear plants worldwide from 1991 through 2002. It was the first occurrence of its kind, ever.

Back then, NRC overlooked:

Red Rusty Boric Acid Deposits on Vessel Flange (12RFO)

In April 2000, an NRC inspector was handed this "red photo" showing reactor vessel head damage at Davis-Besse.

NRC did nothing.

(Except file it.)

Now, NRC overlooks:

In March 2007, the NRC was given the Exponent report which directly contradicts prior FENOC materials like the root cause report, response to NOV & civil penalty, etc.

NRC did TBD .

Pinocchio vs. Puppet-master

***Fall 2001*: FENOC tells NRC that Davis-Besse can keep running without inspections while North Anna, Surry, and other other highly susceptible reactors (except Cook) shut down for CRDM nozzle inspections.**

***Spring 2005:* NRC fines FENOC record $5.45 million for numerous violations, including 50.9.**

***Spring 2007*: FENOC tells NRC it was entirely blameless in keeping Davis-Besse running without inspections.**

***Today*: The NRC is on which end of the puppet strings? Or is NRC still dancing to FENOC's bidding?**

Pinocchio vs. Puppet-master

NRC must stop "rearview mirror regulating," waiting until the boric acid dust settles before taking action.

NRC should have acted in fall 2001 instead of reacting in spring 2005.

NRC must act <u>now</u> to curb this rogue licensee.

Pinocchio vs. Puppet-master

If the truth shall set you free,

repeatedly failing to tell the truth

must cost you that freedom.

The NRC must not allow FirstEnergy to freely tell lie after lie after lie. Enough is more than enough!