

27

From: Michele Evans *NNU*
To: Bruce Boger; Jim Dyer
Date: Fri, Apr 6, 2007 1:45 PM
Subject: Re: Fwd: FW: Platts Nuclear News Flashes - Davis Besse

Jim,

we are **not** "seeking new testing of the problem mechanism on parts that had been removed from other reactors, in response to the report." as the article says.

Totally unrelated to the Exponent Report, RES is continuing research at Argonne related to Alloy 600 PWSCC. As part of that research (again, totally unrelated to Exponent Report), we are planning additional laboratory tests of nozzle material from other reactor vessel heads that were replaced.

I will talk to Scott and make sure he understands this.

Michele

>>> Jim Dyer 04/06/2007 1:12 PM >>>

This is the NYT article I referred to earlier. Jim.
>>> "THAYER, Jay" <jkt@nei.org> 04/06/2007 8:20 AM >>>
FYI

Nuclear Plant Owner Seeks Payment for Lost Production

By MATTHEW L. WALD <http://topics.nytimes.com/top/reference/timestopics/people/w/matthew_l_wald/index.html?inline=nyt-per>

WASHINGTON, April 6 - The owner of an Ohio nuclear plant has asked its insurer to pay for two years of lost production because of corrosion that it called "unexpected and unforeseeable," even though it had resisted government pressure to inspect for acid leaks just before the problem was uncovered in 2002.

The corrosion in the lid of the reactor vessel at the Davis-Besse nuclear plant near Toledo almost ate through the steel, leaving a hole the size of a football and nothing but a thin liner of stainless steel holding in the cooling water that surrounded the radioactive core.

Before the plant's owner, First Energy Nuclear Operating Company, discovered the problem during routine maintenance, the Nuclear Regulatory Commission <http://topics.nytimes.com/top/reference/timestopics/organizations/n/nuclear_regulatory_commission/index.html?inline=nyt-org> had ordered inspections of reactors of that type to see if there was any damage around the vessel head. The company had petitioned for a delay, which the agency granted.

In a report made public late Wednesday by the Nuclear Regulatory Commission, which was prepared as part of the company's insurance claim, First Energy said the corrosion might have occurred over a matter of weeks. When the company was seeking permission to reopen its reactor, it told the commission that the corrosion had occurred over a period of three years.

The company is seeking \$80 million for replacement of the vessel head, and \$106.7 million for the cost of replacement power. The plant was shut for two years, while technicians found a replacement head and installed it. The insurer, Nuclear Electric Insurance, a company with offices in Bermuda and Delaware, would not comment.

Discovery of the corrosion shocked the industry. The General Accounting Office, as it was then named, called it "the most serious safety issue confronting the nation's commercial nuclear power industry since

H-27

Three Mile Island in 1979." The industry fears that an accident would choke off all talk of a nuclear revival.

The damage at Davis-Besse was somewhat different from what the government had warned about. The issue was damage to a part that penetrates the reactor head and moves control rods inside the reactor. The Nuclear Regulatory Commission feared the rod might be ejected. Instead, the part leaked acid-containing water.

The operators got a two-month extension to complete the inspection. If the corrosion took only weeks, some of it would have been prevented by earlier inspection.

On Thursday, Representative Dennis Kucinich <http://topics.nytimes.com/top/reference/timestopics/people/k/dennis_j_kucinich/index.html?inline=nyt-per>, an Ohio Democrat who has urged the commission to revoke First Energy's license to run Davis-Besse, tried again. With the new report, he said, "either FirstEnergy <<http://www.nytimes.com/mem/MWredirect.html?MW=http://custom.marketwatch.com/custom/nyt-com/html-companyprofile.asp&symb=FE>> incompetently managed the plant and allowed a leak to corrode the reactor vessel over many years, or First Energy incompetently reported the root cause of the near meltdown to the N.R.C."

At the Union of Concerned Scientists <http://topics.nytimes.com/top/reference/timestopics/organizations/u/union_of_concerned_scientists/index.html?inline=nyt-org>, a nonprofit group that often complains about safety standards, David Lochbaum, a nuclear engineer, said that if such corrosion could occur within weeks, the N.R.C. might have to order much more frequent inspections.

But at the N.R.C., Scott Brunell, a spokesman, called the estimate that corrosion might occur within weeks "hypothetical" and said that the Davis-Besse report was "one data point," and not enough to prompt a change. In response to the report, the commission staff will seek new testing of the problem mechanism on parts that had been removed from other reactors.

Nuclear disaster was close at hand

Corrosion of lid at Davis-Besse was quick, study says

Cleveland Plain Dealer

John Funk

April 06 - The Davis-Besse nuclear reactor near Toledo probably was closer than anyone thought to catastrophic failure when workers found extensive corrosion of the reactor's lid in February 2002, according to a new study.

A report commissioned by plant owner FirstEnergy Corp. for a pending insurance claim concludes that a reactor coolant leak ate through the 6½-inch steel lid - leaving a thin stainless-steel liner - in only a few weeks in the fall of 2001, even as the Akron-based utility fought regulators' calls for a shutdown to inspect for leaks.

"We have concluded that the large wastage cavity found during the [refueling] inspection in March 2002 . . . could have formed in as little as a few weeks," says the report prepared by Exponent Failure Analysis Association, an engineering consulting company in Menlo Park, Calif.

FirstEnergy has filed a \$200 million claim with Nuclear Electric Insurance Ltd., which insures nuclear

plants. The utility spent more than \$600 million during a federally mandated two-year shutdown to replace the reactor's lid, buy replacement power and upgrade nearly all the safety systems at Davis-Besse.

The analysis by Exponent's engineers argues that FirstEnergy was not negligent when it missed evidence of a leak during several inspections beginning as early as 1996 - because the massive corrosion was sudden, "totally unexpected, unanticipated and unforeseeable."

That is contrary to earlier thinking by the utility, federal authorities and the industry, which assumed cracks had grown very slowly in the stainless alloy tubes called nozzles that carry the reactor's control rods through the reactor lid.

The conventional thinking was that the tiny nozzle cracks took years to form, and that the resulting leakage was harmless because the lid was so hot. The reactor operates at about 600 degrees.

An earlier analysis the utility's engineers submitted to the Nuclear Regulatory Commission argued that the cracks probably began six years before the discovery of the hole and that the corrosion occurred unseen inside the lid over at least four years. The utility said then that it regretted it had missed several opportunities to uncover the leak, misinterpreting ample evidence: rusty dried coolant on the surface of the lid and rust dust in the reactor building.

An NRC safety analysis - assuming slow growth of the cracks and very slow leaks - concluded that the rust hole would have blown open in two to 13 months had it not been found.

The government never bothered to determine whether the reactor building's poorly maintained emergency systems could have contained the 87,000 gallons of superheated radioactive water - since the lid had not blown open.

The new study doesn't predict when the hole would have blown. But it leaves no doubt that would have happened much sooner given the extraordinary rate of corrosion once the leak was established.

"Assessments of potential . . . wastage by the U.S. industry and accepted by the NRC were erroneous," the Exponent report says. "Maximum metal removal rates of approximately 1 cubic inch per year were assumed to be very conservative, whereas actual metal removal rates at Davis-Besse were estimated to have occurred at least 100 times this rate."

If the new report's findings are true, the industry must develop a much more sensitive technology to detect reactor coolant leakage or tighten the limits the government sets on how much can leak out, said David Lockbaum, a nuclear safety engineer with the Union of Concerned Scientists. The group is not opposed to nuclear energy.

FirstEnergy submitted the Exponent report to the NRC last month, because "it was the right thing to do," said spokesman Todd Schneider, since the report's findings have implications for the industry.

NRC regional spokeswoman Viktoria Mitlyng said the agency is evaluating the findings. She noted that since Davis-Besse's problems surfaced, 31 reactor operators have replaced their reactor lids.

The agency has, however, given FirstEnergy 30 days to compare this report's findings with its own analysis and determine whether it will change its inspection program. Schneider said Davis-Besse's new inspection rules call for a shutdown of the reactor if there is a 0.1 gallon-per-minute change in leak rates over 72 hours.

The report has convinced U.S. Rep. Dennis Kucinich, Democrat of Cleveland, that FirstEnergy's operating license should be revoked. "It adds further doubt that FirstEnergy has the competency to manage a nuclear power plant," he said Thursday.

Scott Peterson
Vice President-Communications
Nuclear Energy Institute

1776 I Street NW, Suite 400
Washington, D.C. 20006
p: 202.739.8044
m: 202.497.8505
f: 202.533.0180

nuclear. clean air energy.

From: THAYER, Jay
Sent: Friday, April 06, 2007 8:07 AM
To: PETERSON, Scott
Cc: FERTEL, Marvin; BOWMAN, Skip; MARION, Alex
Subject: Platts Nuclear News Flashes - Davis Besse

Scott,

You probably saw this in the flashes. I spoke with Jim Dyer (NRC) this morning and he told me that Dennis Kucinich had released an inflammatory press release yesterday(?) calling for NRC to pull the Davis-Besse license. I explained what NEI was doing with the peer review panel to address the "potential safety concern" raised by NEIL for the industry. He was relieved that we had taken the lead on this and that the review would produce a conclusion by the end of the month. He shared that the NRC had reviewed the new FENOC report and did not see anything right now that would alter their view of the original NRC/industry actions taken in response to the initial Davis-Besse findings. We agreed to share any new developments.

Jay

--THE MAIN CRACK AT DAVIS-BESSE WAS GROWING MUCH FASTER than previously estimated, according to a report from a consultant hired by operator FirstEnergy Nuclear Operating Co. The report was commissioned as part of the company's insurance claim to recover some of the more than \$600 million in costs for replacement power and for operations and maintenance during a two-year shutdown

of the plant, Fenoc spokesman Todd Schneider said April 5. During a 2002 refueling and inspection outage, plant personnel discovered that boric acid leakage from cracks in reactor pressure vessel head nozzles had caused severe degradation of the vessel head. NRC received the report from Fenoc last month and publicly released it April 5. One of the report's conclusions is that the degradation was not readily detectable during a 2000 refueling outage because the growth of the nozzle crack was relatively slow and then accelerated in fall 2001. NRC Region III spokesman Jan Strasma said April 5 that the agency was studying the report but "at this point we see nothing that changes our previous conclusions" that led the NRC to keep the reactor out of service and impose a \$5.45 million fine.

This electronic message transmission contains information from the Nuclear Energy Institute, Inc. The information is intended solely for the use of the addressee and its use by any other person is not authorized. If you are not the intended recipient, you have received this communication in error, and any review, use, disclosure, copying or distribution of the contents of this communication is strictly prohibited. If you have received this electronic transmission in error, please notify the sender immediately by telephone or by electronic mail and permanently delete the original message.

CC: Bill Bateman; Jay Collins; Jennifer Uhle; John Grobe; Mark Cunningham; Robert Hardies; Terence Chan