

FOIA Resource

From:
Sent: Tuesday, July 29, 2008 1:08 PM
To: FOIA Resource
Subject: FOIA/PA Appeal 2008-0261
Attachments: Lightning NSAC INPO (how things work!).ZIP

FOIA/PA REQUEST
Case No. 2008-00087A
Date Rec'd 7-29-08
Specialist Winters
Related Case 2008-0261

In your denial you say, "The information is considered to be confidential business (proprietary) information."

I am certain that the NRC Information Notice 85-86 was reviewed by INPO before it issued and that INPO approved including the reference to INPO SER 76-84. INPO most certainly did not regard INPO SER 76-84 as business (proprietary) information.

I need INPO SER 76-84 to complete a certain entry in my blog.

The attachment, 8 pages, is a copy of that certain entry in my blog. The images on pages 2 and 3 of the primary attachment lack clarity; therefore, those images are additionally attached.

Robert H. Leyse



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NOTE 86 FROM ROSEN TO LAPALLEE 12-AUG-80 7:18 PM
BILL. I QUESTION THE ENTRY OF THE 6-2-80 EVENT AT SALEM
(LIGHTNING STRIKE) AS A SIGNIFICANT EVENT. SIGNIFICANCE
SHOULD BE JUDGED AGAINST A STANDARD OF GENERIC APPLICABILITY
AND OR SERIOUS CONSEQUENCES. PLEASE REPLY ON NOTEPAD TO ME...NO
BIG PROBLEM BUT IF YOU AGREE I SUGGEST DELETION OF YOUR ENTRY
DISAGREE PLEASE SAY WHY...APPRECIATE YOUR COOPERATION STEVE
ROSEN

NOTE 86 FROM ROSEN TO LAPALLEE 12-AUG-80 7:18 AM
BILL, I QUESTION THE ENTRY OF THE 6/8/80 EVENT AT SALEM
(LIGHTNING STRIKE) AS A SIGNIFICANT EVENT. SIGNIFICANCE
SHOULD BE JUDGED AGAINST A STANDARD OF GENERIC APPLICABILITY
AND OF CERTAIN CONSEQUENCES. PLEASE REPLY ON NOTEPAD TO ME...NO
BIG PROBLEM BUT IF YOU AGREE I SUGGEST DELETION OF YOUR ENTRY
DISAGREE PLEASE SAY WHY...APPRECIATE YOUR COOPERATION STEVE
ROSEN

[Faint handwritten notes, possibly including dates like 12/1/80]

[Faint handwritten notes]

Lightning, NSAC and INPO, (how things work)

NSAC: Nuclear Safety Analysis Center, A defunct branch of the Electric Power Research Institute.

INPO: Institute of Nuclear Power Operations, A very active and somewhat secretive group that is funded by operators of nuclear power plants.

Right after the accident at Three Mile Island Unit 2 during April, 1979, the nuclear utility members of EPRI mandated the immediate formation of NSAC at Palo Alto, California. INPO was formed several months later, headquartered in Atlanta, Georgia.

I was with NSAC when I classified the consequences of a lightning strike at Salem Unit 1 on June 8, 1980, as a Significant Event and my report was entered into our communications system on August 12, 1980, as an NSAC/INPO SIGNIFICANT EVENT. See the first slide below, click on the slide to enlarge, and use your back arrow to return here.

INPO immediately objected to my entry and worked overtime to demand its rejection. See the second slide. I insisted that the entry should be maintained.

My writup was indeed deleted, as I found out on March 11, 1982, a few months short of

two years later when NSAC's file manager gave the hard copy (slide 1) from her personal files. (NSAC management did not appreciate her diligence and she was assigned to another group at EPRI.)

Well, it is really amazing, HOW THINGS WORK! It turns out that on November 5, 1985, the NRC issued an Information Notice regarding lightning strikes. In contrast to INPO's rejection of my above SER that is dated 12-Aug-80, the NRC included the lightning strike at Salem on June 9, 1980, in this Information Notice that is dated November 5, 1985.

BUT WHAT IS EVEN MORE FUN: the NRC referenced INPO report, INPO SER 76-84, in its Information Notice. Very likely, the INPO Significant Event Report, SER 76-84, includes the Salem event that INPO effectively censored on 12-AUG-80. It is also interesting that it apparently was not until 1984 that INPO admitted that lightning strikes induced significant events. And, very likely, the NRC became aware of the significance of lightning strikes when it became aware of INPO SER 76-84 in the course of its confidential communications with INPO.

Here is NRC Information Notice 85-86; note the reference to INPO SER 76-84. Also, the NRC's writeup of the lightning strike at Salem is less inclusive than my Significant Event Report of August 12, 1980.

SSINS No.: 6835 IN 85-86
UNITED STATES NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT WASHINGTON, D.C. 20555

November 5, 1985 Information Notice No. 85-86:

LIGHTNING STRIKES AT NUCLEAR POWER GENERATING STATIONS

Addressees: All nuclear power reactor facilities holding an operating license (OL) or a construction permit (CP).

Purpose: This notice is provided to alert recipients of a potentially significant problem of reactor trips and instrument damage caused by lightning strikes. It is expected that recipients will review the information for applicability to their facilities and consider actions, if appropriate, to preclude a similar problem occurring at their facilities. However, suggestions contained in this notice do not constitute NRC requirements; therefore, no specific action or written response is required. The NRC is continuing to evaluate pertinent information. Recipients of this notice will be notified of additional information or if specific actions are required.

Description of Circumstances: A number of plant trips and instrumentation problems

attributable to lightning have occurred over the past 6 years. Since solid state circuitry designs are being increasingly employed in safety related systems, the impact of lightning induced line surges on those circuits is emphasized in this notice. Descriptions of several of the more significant events are presented below. Events involving lightning strikes of switchyards and the consequential impact on power distribution systems are not covered by this notice. However, **INPO SER 76-84** covers this latter subject as well as summarizing earlier INPO documents dealing with lightning strikes at nuclear power plants.

Zion Power Station Units 1 and 2

On August 17, 1979, both units tripped simultaneously during a severe lightning storm. Investigation indicated that a lightning strike in close proximity to the plant caused either a momentary surge or interruption in the ac power supply circuits to the rod control power supply cabinets. This transient tripped the overload protection devices for the dc power supply cabinet, resulting in a power interruption to the control rod stationary gripper coils, 8511010020 . IN 85-86 November 5, 1985 Page 2 of 4 which caused the rods to drop into the core. The resulting high, negative flux rate initiated the reactor trip signal. Tests verified that noise induced on the ac input to one power supply would actuate the overvoltage protection trips on the main and auxiliary power supplies. In addition to the noise spikes, one Unit 2, 24-V positive power supply was damaged by the lightning strike and had to be replaced. The following corrective actions were initiated:

- o The control rod system neutral was isolated from the station ground.
- o The overvoltage protection trip setting was changed from 27 to 29 V. o A low-pass filter was installed on the input to each 24-V positive power supply.
- o A volt trap (a voltage suppressor circuit designed to reduce large voltage surges and noise induced by lightning strikes) was installed across the 50-ohm motor generator neutral resistor.
- o A volt trap was installed across the power feed to the auxiliary power supply.
- o The power feed for the auxiliary power supply was changed from the 480-V system to the control rod drive (CRD) motor generators.

Zion Unit 2 experienced additional reactor trips attributed to lightning on April 3 and July 16, 1980, before the above listed corrective actions were implemented. In these cases it was determined that the transient tripped the overload protection devices, as was the case in the trip of both units on August 17, 1979. However, no power supplies or other equipment were damaged during the latter two trips.

Again, on December 2, 1982, Zion Unit 2 reactor tripped from 100% power during an electrical storm. It was concluded that lightning induced a disturbance in the electrical system causing a reactor trip from a generator trip. Additional lightning protection for

the containment building was provided and the static wire associated with the 345-kV line was isolated from the power station structural steel.

Salem Power Station Unit 1

On June 9, 1980 the reactor tripped during an electrical storm. Lightning struck at the south penetration area of reactor containment causing a transient on seven main steam pressure transmitters. Two of these pressure transmitters were damaged and had to be replaced. The transient caused a high steam line pressure differential reactor trip signal and a safety injection signal. The licensee believes the lightning strike hit main steam vent pipes which extend above the penetration area roof and the surge was carried into the building via piping connections.

Kewaunee Power Station

On August 19, 1980, two of four instrument busses lost power during an electrical storm. This resulted in a spurious safety injection (SI) actuation signal, and the unit tripped from full power. In addition to inducing the instrumentation transients, the inverter fuses were blown. These fuses were replaced, and no other evidence of equipment failure was observed.

Byron Power Station Unit 1

On July 13, 1985, when lightning struck the Unit 1 containment, the reactor tripped from approximately 11% power because of induced voltage surges in instrument and control cables in one of four containment penetration areas. The induced voltage caused failure of four rod drive power supplies, including 1 redundant pair. The failure of the redundant supplies resulted in 10 control rods dropping into the core. A power range negative-flux-rate reactor trip resulted from the rod insertion. In addition to the reactor trip, damage occurred to 30 plant instruments. The following systems were affected by the damaged instrumentation: protection channel II, one train of the 48-volt power supply for the solid state protection system, the meteorological tower, control rod drive, and loose-parts monitoring.

A review of cable routings showed that a significant common denominator existed in containment penetrations. All damaged instruments were associated with cables passing through penetrations located in one containment region. In addition to the damaged instrumentation, the lightning damaged a significant amount of security equipment.

The licensee determined that an improved lightning protection system was required to prevent recurrence of a similar incident. By installing copper conductors, external to containment, from the roof mounted lightning rods directly to ground rods in the earth, a low impedance path to ground was provided for future lightning strikes. This modification is similar to the Zion modification described above.

Arkansas Power Station Unit 2

On August 5, 1985, the reactor tripped from 100% power on a low departure- from-nucleate-boiling ratio (DNBR) signal as the result of a lightning strike transient induced in two of the core protection system channels. The licensee's followup investigation revealed no damage to the plant's electrical equipment or instrumentation measuring systems.

No specific action or written response is required by this information notice. If you have any questions about this matter, please contact the Regional Administrator of the appropriate regional office or this office.

Edward L. Jordan, Director, Division of Emergency Preparedness and Engineering Response, Office of Inspection and Enforcement.

So, I sent the following request to the NRC asking them to allow me to have copy of INPO SER 76-84. Here is the e-mail and it is followed by the NRC's denial.

FOIA request for INPO SER 76-84

Date:6/22/2008 11:44:16 A.M. Mountain Daylight Time

From:Bobleyse

To:FOIA.resource@nrc.gov

attachedInformation Notice No. 85-86: Lightning Strikes at Nuclear Power references INPO SER 76-84. This discloses that NRC has INPO SER 76-84. This is my request under FOIA to be provided with a copy of INPO SER 76-84.

Information Notice No. 85-86: Lightning Strikes at Nuclear Power ...However, INPO SER 76-84 covers this latter subject as well as summarizing earlier INPO documents dealing with lightning strikes at nuclear power plants. ...www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/1985/in85086.html - 23k - Cached - Similar pages

Robert H. Leyse

The NRC denied this request arguing that, "The information is considered to be confidential business (proprietary) Information."

This denial does not have a reasonable basis. Very likely the NRC's Information Notice 85-86 was issued only following its review by INPO and INPO then had no objection to the citing of INPO SER 76-84. I'll appeal the NRC's denial of my FOIA, and I'll report what happens.

In the meantime lightning continues. Recently I found the following in my July 2008 copy of Nuclear News. "**Millstone 2 tripped off the line on May 22 (2008) because of either a lightning strike on the main transformer or a grid disturbance from a lightning strike on a transmission line offsite. ... Millstone 2 returned to service on May 28 (2008).**" I'll track this in my spare time.