

FOIA/PA NO: 2015-0444

GROUP: B

**RECORDS BEING RELEASED
IN THEIR ENTIRETY**

Siwy, Andrew

From: Burritt, Arthur
Sent: Saturday, May 09, 2015 10:20 PM
To: Schroeder, Daniel
Subject: Re: Event Notice: 05/09/2015 - Update - Indian Point Unit 3.

Thanks

----- Original Message -----

From: Schroeder, Daniel
Sent: Saturday, May 09, 2015 09:56 PM
To: Schroeder, Daniel; Burritt, Arthur; Nieh, Ho; Scott, Michael; Trapp, James; Lew, David; Dorman, Dan; Screnci, Diane; McNamara, Nancy; Tift, Doug
Subject: RE: Event Notice: 05/09/2015 - Update - Indian Point Unit 3.

I just received word from the HOO that the UE was exited at 2103.

Dan

From: Schroeder, Daniel
Sent: Saturday, May 09, 2015 9:25 PM
To: Burritt, Arthur; Nieh, Ho; Scott, Michael; Trapp, James; Lew, David; Dorman, Dan; Screnci, Diane; McNamara, Nancy; Tift, Doug
Subject: FW: Event Notice: 05/09/2015 - Update - Indian Point Unit 3.

IP3 is still in an unusual event. Release of oil from the affected transformer into the river.

Dan

From: HOO Hoc
Sent: Saturday, May 09, 2015 9:12 PM
To: HOO Hoc
Subject: Event Notice: 05/09/2015 - Update - Indian Point Unit 3.

See attached.

Headquarters Operations Officer
U.S. Nuclear Regulatory Commission
Phone: 301-816-5100
Fax: 301-816-5151
email: hoo.hoc@nrc.gov
secure e-mail: hoo1@nrc.sgov.gov

B-1

Siwy, Andrew

From: Burritt, Arthur
Sent: Saturday, May 09, 2015 10:19 PM
To: McNamara, Nancy
Subject: Re: IP3 UE Exited????

Yes UE exited at 2104

----- Original Message -----

From: McNamara, Nancy
Sent: Saturday, May 09, 2015 09:51 PM
To: Schroeder, Daniel; Burritt, Arthur; Nieh, Ho; Scott, Michael; Trapp, James; Lew, David; Dorman, Dan; Screnci, Diane; Tift, Doug
Subject: IP3 UE Exited????

State just called me and said their warning point was told that the UE was exited about 15 minutes ago. Do we have confirmation of that??

-----Original Message-----

From: Schroeder, Daniel
Sent: Saturday, May 09, 2015 9:26 PM
To: Burritt, Arthur; Nieh, Ho; Scott, Michael; Trapp, James; Lew, David; Dorman, Dan; Screnci, Diane; McNamara, Nancy; Tift, Doug
Subject: FW: Event Notice: 05/09/2015 - Update - Indian Point Unit 3.

IP3 is still in an unusual event. Release of oil from the affected transformer into the river.

Dan

From: HOO Hoc
Sent: Saturday, May 09, 2015 9:12 PM
To: HOO Hoc
Subject: Event Notice: 05/09/2015 - Update - Indian Point Unit 3.

See attached.

Headquarters Operations Officer
U.S. Nuclear Regulatory Commission
Phone: 301-816-5100
Fax: 301-816-5151
email: hoo.hoc@nrc.gov
secure e-mail: hoo1@nrc.sgov.gov

Siwy, Andrew

From: Burritt, Arthur
Sent: Saturday, May 09, 2015 9:04 PM
To: McNamara, Nancy
Subject: RE: IP UE offsite notifications

will do

From: McNamara, Nancy
Sent: Saturday, May 09, 2015 8:57 PM
To: Burritt, Arthur
Subject: RE: IP UE offsite notifications

Got it. The question I'm getting from the counties and state is if we know why the Governor is at the site. Can you ask the residents if they heard anything. If they don't know, then that's fine too..

From: Burritt, Arthur
Sent: Saturday, May 09, 2015 8:56 PM
To: McNamara, Nancy
Subject: Re: IP UE offsite notifications

No the residents are calling me at 9:00

From: McNamara, Nancy
Sent: Saturday, May 09, 2015 08:48 PM
To: Burritt, Arthur
Subject: RE: IP UE offsite notifications

Doug said there is a call at 9. Is there? If so, thru the HOO?

From: Burritt, Arthur
Sent: Saturday, May 09, 2015 8:39 PM
To: McNamara, Nancy
Subject: Re: IP UE offsite notifications

Will do

From: McNamara, Nancy
Sent: Saturday, May 09, 2015 08:02 PM
To: Burritt, Arthur; Nieh, Ho
Cc: Lew, David; Tift, Doug
Subject: IP UE offsite notifications

Hi Art. Doug and I notified the State, FEMA and the counties. Licensee is also keeping them informed. Next licensee conference call will occur when they back down from the UE or something changes for the negative. Offsite notifications were timely. Offsite was told that the Verplank Fire Department responded and did put foam on the area. IP indicated the flashing continues; therefore, they continue to put foam on the area. I'm on call this weekend, so please call me if something escalates. Otherwise, please continue to put Doug and I on update emails.

Thanks
Nancy

McKenzie, Kieta

From: Lew, David
Sent: Sunday, May 10, 2015 8:11 AM
To: McNamara, Nancy; Schroeder, Daniel; Burritt, Arthur; Nieh, Ho; Scott, Michael; Trapp, James; Dorman, Dan; Screnci, Diane; Tiff, Doug
Subject: RE: Update re: State/Counties

Thanks Nancy, Just for clarification, did you mean that the licensee could have been more timely with the UE exit? If the counties/State meant us, I would push back a bit because we are not a surrogate for their internal communications.

-----Original Message-----

From: McNamara, Nancy
Sent: Saturday, May 09, 2015 10:28 PM
To: Schroeder, Daniel; Burritt, Arthur; Nieh, Ho; Scott, Michael; Trapp, James; Lew, David; Dorman, Dan; Screnci, Diane; Tiff, Doug
Subject: Update re: State/Counties

State and Counties are satisfied with our communications. Could have been more timely on the UE exit, but otherwise they are all good. Thanks to everyone that gave us updates and getting to us right away about the Governor being onsite. Really appreciate the team effort.

Have a nice remainder of the weekend,
Nancy

-----Original Message-----

From: Schroeder, Daniel
Sent: Saturday, May 09, 2015 9:56 PM
To: Schroeder, Daniel; Burritt, Arthur; Nieh, Ho; Scott, Michael; Trapp, James; Lew, David; Dorman, Dan; Screnci, Diane; McNamara, Nancy; Tiff, Doug
Subject: RE: Event Notice: 05/09/2015 - Update - Indian Point Unit 3.

I just received word from the HOO that the UE was exited at 2103.

Dan

From: Schroeder, Daniel
Sent: Saturday, May 09, 2015 9:25 PM
To: Burritt, Arthur; Nieh, Ho; Scott, Michael; Trapp, James; Lew, David; Dorman, Dan; Screnci, Diane; McNamara, Nancy; Tiff, Doug
Subject: FW: Event Notice: 05/09/2015 - Update - Indian Point Unit 3.

IP3 is still in an unusual event. Release of oil from the affected transformer into the river.

Dan

From: HOO Hoc
Sent: Saturday, May 09, 2015 9:12 PM
To: HOO Hoc
Subject: Event Notice: 05/09/2015 - Update - Indian Point Unit 3.

See attached.



Headquarters Operations Officer
U.S. Nuclear Regulatory Commission
Phone: 301-816-5100
Fax: 301-816-5151
email: hoo.hoc@nrc.gov
secure e-mail: hoo1@nrc.sgov.gov

Siwy, Andrew

From: McNamara, Nancy
Sent: Monday, May 11, 2015 3:23 PM
To: Screnci, Diane; Sheehan, Neil; Lew, David; Dorman, Dan; Setzer, Thomas; Scott, Michael; Nieh, Ho
Cc: Tifft, Doug
Subject: Lowey Statement on Indian Point Transformer Explosion (Member Page)

From: Moreno, Angel
Sent: Monday, May 11, 2015 3:16 PM
To: McNamara, Nancy; Tifft, Doug
Subject: Lowey Statement on Indian Point Transformer Explosion (Member Page)

Lowey Statement on Indian Point Transformer Explosion

05/10/15

Transformer explosion highlights nuclear facility's extreme danger to one of the most densely-populated areas of the planet

Lowey urges NRC to reject re-licensing of Indian Point reactors

Lowey legislation would create an emergency preparedness grant program and stringent criteria for re-licensing old plants

BUCHANAN, NY - Congresswoman Nita M. Lowey (Westchester/Rockland), the Ranking Member on the House Appropriations Committee, released the following statement on the transformer explosion at the Indian Point Nuclear Facility (Indian Point) on Saturday, May 9, 2015, and announced measures she is pursuing to ensure safety of nuclear facilities.

"This latest episode proves that Indian Point remains a serious threat to public health and safety," said **Lowey**. "We are extremely fortunate that a catastrophic scenario did not unfold, and I urge officials to conduct a swift and thorough investigation. I remain deeply skeptical that Indian Point's continued operation is in the best interests of families and businesses in our densely-populated region. As Ranking Member of the House Appropriations Committee, I will continue working to help prevent a worst case scenario for the Lower Hudson Valley and New York City metro area."

Lowey is once again calling on the Nuclear Regulatory Commission (NRC) to not renew Indian Point's license for their reactors. Lowey recently re-introduced two pieces of legislation. The first would require NRC to award grants for emergency preparedness when the agency collects safety-related fines from nuclear facilities. The second is the Nuclear Power Licensing Reform Act, which would require the NRC to evaluate aging power plants to be re-licensed with the same stringent criteria used to license new plants. In particular, this bill would:

- Ensure a nuclear facility not pose an unreasonable threat to persons or the environment, including vulnerability to terrorist attacks;
- Require adequate evacuation plans for emergency events with approval from Federal agencies and states within 50 miles of the facility;
- Require that any re-licensing be subject to the same stringent criteria that would be used in an original application for initial construction; and
- Instruct the NRC to determine whether changes in the size or distribution of the surrounding population have resulted in the facility utilizing a site on which a new facility would not be allowed.

B-5

Lowey has repeatedly cautioned about the dangers the Indian Point facilities pose to families, businesses, and the environment in the New York City metro area. To address safety concerns, Lowey has:

- Called on NRC to not consider re-licensing Indian Point reactors 2 and 3 in 2013 and 2015 after NRC ranked Indian Point as the nation's most at-risk facility from earthquake failure;
- Pushed for additional congressional hearings on the re-licensing of nuclear facilities;
- Urged NRC to evaluate all possible threats, including terrorism and natural disasters, as well as safety and evacuation procedures in determining the re-licensing of the Indian Point;
- Brought then-NRC Chairman Gregory Jaczko for a tour of the Indian Point facility in May 2011 to highlight the need for improved safety;
- Introduced legislation to require NRC to award grants for emergency preparedness when it collects safety related fines from plants; and
- Sent a letter to the NRC Chairman calling for expanded NRC evacuation plan requirements to include areas within 50 miles of a nuclear facility, which would be evacuated in the event of a Fukushima-level nuclear emergency.

<http://lowey.house.gov/press-releases/lowey-statement-on-indian-point-transformer-explosion/>

###

Siwy, Andrew

From: McNamara, Nancy
Sent: Monday, May 11, 2015 1:54 PM
To: Dorman, Dan; Lew, David; Setzer, Thomas; Nieh, Ho; Scott, Michael
Cc: Sheehan, Neil; Screnci, Diane
Subject: Geri Shapiro Briefing RE: IP UE

Importance: High

OCA has a request from Geri Shapiro for RI to brief her on the Indian Point event. She will provide OCA with times for this afternoon and tomorrow morning. I told OCA we would prefer today since we have the counterpart meeting in the morning. However, we will do what we have to do to fulfill her request. I'm working with Tom Setzer for DRP support of the call.

Also, U.S. Representative Eliot Engel is planning on putting out a press release today. We have no information on content.

b-6

Setzer, Thomas

release

From: Stewart, Scott
Sent: Tuesday, May 12, 2015 3:46 PM
To: Setzer, Thomas; Rogge, John
Cc: Schussler, Jason; Newman, Garrett; Schmidt, Wayne
Subject: IPEC Transformer Oil Classification
Attachments: MSDS-Type-I-Nyro-Orion-1-Transformer-Oil-11_08_10.pdf

MSDS attached - FYI

From: Stewart, Scott [mailto:jste104@entergy.com]
Sent: Tuesday, May 12, 2015 3:28 PM
To: Stewart, Scott
Subject: FW: Mineral Oil Classification

From: Elliott, Kevin P
Sent: Tuesday, May 12, 2015 3:11 PM
To: Stewart, Scott
Subject: FW: Mineral Oil Classification

Scott:

The MSDS for the 31MT oil, per our switchyard/transformer guru. Let me know if you need anything else on this.

KE





Adding value to
your formulations

MATERIAL SAFETY DATA SHEET

Nytro Orion I Transformer Oil

1. Identification of the Substance/Preparation and the Company/Undertaking

Product Name: NYTRO ORION I TRANSFORMER OIL

Product Type: INSULATING MINERAL OIL

Supplier: SOLTEX, INC.
3707 FM1960 WEST, SUITE 560
HOUSTON, TX 77068
USA

Emergency Phone Number: CHEMTREC (800) 424-9300

Other Safety Information: (281) 587-0900

2. Hazards identification

- Classification: No classification needed according to 67/548/EC and 1999/45/EC.
- Human Health: Inhalation of vapors and/or mists might irritate respiratory tract.
- Prolonged skin contact will cause defatting and possible irritation.
- Eye contact might cause irritation.
- Environment: Slow biodegradation, the product will remain for long time in the environment. Risk for contamination of earth, soil and water.
- Physical and chemical hazard: At elevated temperatures flammable vapors and decomposition products will be released. Risk for slippery floors if spilled out.

3. Composition/Information of Ingredients

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>EC-No</u>	<u>Weight-%</u>
Hydrotreated Light Naphthenic distillate	64742-53-6	265-156-6	>99.0%
2,6-ditertiary Butyl-4-Methyl Phenol	128-37-0	204-881-4	<0.1%

4. First Aid Measures

General advice:

- Inhalation: If inhalation of mists, fumes, or vapors occurs causing irritation, move to fresh air. If the symptoms persist, obtain medical advice.
- Skin contact: Remove immediately adhering matter and wash off with soap and plenty of water.
- Eye contact: Rinse with plenty of water.
- Ingestion: Clean mouth with water. Obtain medical advice if a large amount has been swallowed. Do not induce vomiting.

5. Fire-fighting Measures

Suitable extinguishing media:

- Extinguish preferably with dry chemical, carbon dioxide (CO₂), or foam. Water-spray/mist may be used.

Extinguishing media which must not be used for safety reasons:

- Water jet, unless used by authorized people. (Stain risk caused by combustion).

6. Accidental Release Measures

- Personal precautions: Suitable protection equipment should be used. In case of large spillage, the cleaning procedure should be carried out using suitable protective clothing such as overalls, gloves and boots. Remove contaminated clothes as soon as possible. Smaller spillage can be wiped up with paper cloths, using protective gloves.
- Environmental precautions: Prevent spills from spreading to drains, sewers, watercourses, and soil. Contact local safety authorities.
- Methods for cleaning up: Absorb leaking product with sand, earth or other suitable inert material and collect. Disposal according to section 13.

7. Handling and Storage

- Handling: Handle in accordance with good industrial hygiene and safety practices. If handled at elevated temperatures or with high-speed mechanical equipment, vapors or mists might be released and require a well-ventilated workplace.
- Storage: Store at ambient temperature or with lowest necessary heating as handling requires.

8. Exposure Controls/Personal Protection

Control parameters: Exposure via the air and normal handling.

- Chemical name: Mineral oil.
- Short-term value: 5 mg/m³. TLV-TWA 8 hours ACGIH (1998).
- Engineering measures to reduce exposure: Mechanical ventilation and local exhaust will reduce exposure via the air. Use oil resistant material in construction of handling equipment. Store under recommended conditions and if heated, temperature control equipment should be used to avoid overheating.

Personal protection equipment:

- Respiratory protection: If the product is heated under manual handling, use suitable mask with filter A1P2 or A2P2. Handling in automatic production lines, with exhaust or ventilation, will not require mask.
- Hand protection: Wear oil-resistant protective gloves if there is a risk of repeated skin contact. Suitable gloves are neoprene, nitrile, acrylnitrilebutadiene rubber, or PVC. Take notice of CEN 420:94, CEN 374:1-3:94 and CEN 388:94.
- Eye protection: Wear safety goggles/safe shield if splashes may occur.
- Skin and body protection: Wear protective clothing if there is a risk of skin contact and change them frequently, or when contaminated.
- Hygienic measures: Act in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

Form:	Viscous liquid
Color:	<0.5 pale light yellow
Odor:	Odorless / light petroleum
Melting point/pour point:	-60°C
Initial boiling point:	>250°C
Density 15°C:	885 kg/m ³
Flash point, PM:	144°C
Auto ignition temp.:	>270°C
Solubility in water:	Non soluble
Solubility in organic solvents:	Soluble
Decomposition temp.:	>280°C
Vapor pressure at 100°C:	160 Pascal
DMSO extractable compounds according to IP346:	< 3%
Calculated partition coefficient n-octanol/water, log Pow:	>6
Viscosity at 40°C:	9,0 cSt
pH:	non relevant

10. Stability and Reactivity

- Stability: Stable at normal conditions. Starts to decompose above 280°C
- Avoid: Excessive heating and highly oxidizing agents.
- Hazardous decomposition products: Flammable gases which might also be noxious. With air present, there is a risk for auto ignition at temperatures >270°C.

11. Toxicological Information

Acute toxicity:

- Studies available indicate oral and dermal LD 50 s of >5 000 mg/kg which is considered as low acute toxicity.

Local effects:

- Inhalation: Prolonged and repeated inhalation of mist or vapor generated at elevated temperatures may irritate respiratory tract.
- Oral: May cause nausea and eventually vomiting and diarrhea.
- Skin contact: Prolonged or repeated exposure may lead to defatting of the skin and subsequent irritation.
- Eye contact: May cause redness and transient pain.
- Sensitization: Studies indicate no evidence of sensitization.

12. Ecological Information

- Mobility: Low, due to low water solubility.
- Persistence/degradability: The base oil is not readily biodegradable. Substances may not meet criteria for ready biodegradability. Studies indicate inherent, primary biodegradation in the range of 20-60 % based on carbon dioxide evolution.
- Bio-accumulation: Base oil has Log Pow in the range >3,9->6,0.
- Log Pow is used for estimating the bioaccumulation in fish. A value >3,0 indicates possible bioaccumulation. The size of the hydrocarbon molecules reduces the risk for bioaccumulation.
- Ecotoxicity: Aquatic toxicity data on base oils indicate LC50 values of >1 000 mg/l, which is considered as low toxicity. Chronic toxicity studies shows no long-term hazard to the aquatic environment.

13. Disposal Considerations

- Residues of unused product are not regarded as hazardous waste. Residues of products/packaging must not be disposed of in the environment, but taken care of in accordance with local regulations.

Emptying instructions:

- Barrels and equals: Turn the barrel upside down and tilt it approximately 10° until nondripping. Nondripping is less than one drop / minute at 15 °C. The product viscosity depends on temperature, and it is important that the emptying is not done at too low of a temperature. It may be necessary to scrape out high viscous products. When the barrel is nondripping send it for recycling. If the residue volume is more than 1% send it for destruction of barrels. Empty barrels with < 1 % residue are not dangerous goods. Notify local regulations.
- Bags for one way use/multiple use: Follow instructions given by the bag manufacturer. The last residues in the bag can be removed by placing the hose over the remaining residues or by lifting the bag so the product can run towards the hose.
- Bottom residues: Roll up the bag towards the hose to press out the oil.
- One way bags of polyethylene can be recycled or disposed of by incineration. Notify local regulations.

14. Transport Information

The product is not classified as hazardous goods for land, sea, and air transport according to the respective regulations (ADR, IMDG, IATA-DGR).

15. Regulatory Information

- Classified according to European directives on classification of hazardous substances and preparations. Not classified as hazardous. No statutory label required.
- Listed in TSCA (Toxic Substances Control Act) and EINECS.
- Listed in Canadian DSL registry.



*Adding value to
your formulations*

MATERIAL SAFETY DATA SHEET

16. Other Information

The information for labeling and ecotoxicity is according to Concawe Report No. 95/59, 98/54, 05/6 and 01/54.

Classified according to the Dangerous Substance Directive, 67/548/EC up to the most recent ATP, the Dangerous Preparation Directive 1999/45/EC, and the Safety Data Sheet Directive 2001/58/EC, and REACH (EC) No 1907/2006 according to transitional provisions.

Classification of component with CAS no 128-37-0:

- Classified as dangerous for the environment, N, according to 67/548/EC and 1999/45/EC.
 - R51/53: Toxic to aquatic organisms, may cause long-term effects in the aquatic environment.
- Component CAS no 64742-53-6 has DMSO extractible compounds according to IP 346 <3%.

The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3 w%w DMSO extract as measured by IP 346.

No warranties, express or implied, including warranties of merchantability or fitness for a particular use are made with respect to the products described herein. Nothing contained herein shall constitute permission or a recommendation or inducement to practice any invention covered by a patent without the permission of the patent owner. Customers/users are advised to test the product in advance to make certain it is suitable for their particular production conditions and use or uses of the product. Seller shall not be liable for and the customer assumes all risk and liability for any use or handling of the product.

Date: 11/8/2010

Page 5 of 5

SOLTEX, INC. 3707 FM 1960 West, Suite 560, Houston, TX 77068 | Phone: 281.587.0900 | Fax: 281.587.1998 www.soltexinc.com

● ACETYLENE BLACK ● ALKYLATES ● BASE OILS (GROUP II AND GROUP III) ● CABLE FLOOD, FILL AND GELS ● DIELECTRIC FLUIDS ● PERFORMANCE ADDITIVES
● POLYALPHAOLEFINS ● POLYBUTENES (STANDARD GRADES) ● REFRIGERATION FLUIDS ● SPECIALTY POLYISOBUTYLENE ● SULFONATES

Siwy, Andrew

From: McNamara, Nancy
Sent: Tuesday, May 12, 2015 1:03 PM
To: Dorman, Dan; Lew, David; Setzer, Thomas; Nieh, Ho; Scott, Michael; Screnci, Diane; Sheehan, Neil
Cc: Tift, Doug
Subject: REP. ENGEL Statement: TRANSFORMER EXPLOSION AND FIRE JUST THE LATEST PROBLEM PLAGUING INDIAN POINT

Importance: High

From: Moreno, Angel
Sent: Tuesday, May 12, 2015 11:37 AM
To: McNamara, Nancy; Tift, Doug
Subject: REP. ENGEL: TRANSFORMER EXPLOSION AND FIRE JUST THE LATEST PROBLEM PLAGUING INDIAN POINT

REP. ENGEL: TRANSFORMER EXPLOSION AND FIRE JUST THE LATEST PROBLEM PLAGUING INDIAN POINT

05/11/15

Rep. Engel: Transformer Explosion and Fire Just the Latest Problem Plaguing Indian Point

Washington, D.C. – Congressman Eliot Engel, a senior member of the House Energy and Commerce Committee, released the following statement on the Indian Point transformer explosion:

“This weekend’s transformer explosion is the latest in a long-history of near-misses at the troubled Indian Point nuclear power plant. Entergy is emphatically telling the public that there’s nothing to see here, but the plumes of smoke rising above the facility tell an entirely different story. Indian Point is old, dangerous, and should never have been built where it stands.

“This latest incident is also a reminder of the environmental hazards associated with Indian Point. According to Nuclear Regulatory Commission estimates, several thousands of gallons of oil spilled into the Hudson River resulting in a deadly oil sheen that measures hundreds of feet in diameter.

“Whether it is exploding transformers, chemical leaks into the Hudson, or oil leaking into the water, this aging nuclear reactor on two major fault lines continues to beg to be closed down.”

<http://engel.house.gov/latest-news1/rep-engel-transformer-explosion-and-fire-just-the-latest-problem-plaguing-indian-point/>

Siwy, Andrew

re:nailed

From: Tifft, Doug
Sent: Tuesday, May 12, 2015 7:22 AM
To: Screnci, Diane; Sheehan, Neil; Burritt, Arthur
Cc: McNamara, Nancy; Nieh, Ho; Scott, Michael; Dorman, Dan; Lew, David
Subject: FW: Galef: Transformer Fire at Indian Point Raises More Questions About AIM Pipeline Siting
Attachments: Galef Let to Editor re Transformer Fire at Indian Point.doc

FYI. Letter to the editor from Assemblywoman Galef regarding the transformer fire and reiterating concerns surrounding the proposed gas line.

-Doug

From: Sandra Galef [mailto:galefs@assembly.state.ny.us]
Sent: Monday, May 11, 2015 6:00 PM
Cc: 'Jennifer Fields-Tawil'; Dana Levenberg
Subject: Galef: Transformer Fire at Indian Point Raises More Questions About AIM Pipeline Siting

May 11, 2015

To The Editor:

This Saturday's transformer fire at the Indian Point Energy Center is a reminder that we must be extremely vigilant with safety protections and oversight at this facility. Over the past few months, I have actively opposed the siting of the 42" high pressure AIM gas pipeline near the nuclear power plant.

I am well aware that there are numerous safety protections in place at Indian Point, with back-ups upon back-ups. In fact, transformer fires do happen and the plant did take appropriate actions to deal with this one.

Nevertheless, to add yet another high powered energy distribution system into the equation really seems to be tempting fate. Just because it is expedient to make this the chosen path for the pipeline does not make it wise. This particular emergency was contained, but even with a relatively minor event such as this in the scope of Indian Point, unexpected circumstances can lead to unexpected reactions.

Governor Cuomo stated about the accident at Indian Point, "Anything that happens at this plant obviously raises concerns. A transformer fire in and of itself was not dangerous, but the fear is always that one situation is going to trigger another..."

A confluence of high energy power generation and distribution at this location is literally asking for trouble. This is not the only option, and therefore should not be the chosen option for the AIM gas pipeline siting. I urge New York state to seek a stay from the federal government on the approval to site a pipeline at this locale. We must conduct an independent risk analysis using research from past gas line explosions to determine if there really is no additional threat to public safety with this new high powered pipeline at this location. The safety of our public is at stake.

Sincerely,
Sandy Galef
Assemblywoman
(914) 450-4086

From: Dentel, Glenn
To: Sheehan, Neil; Nieh, Ho; Scott, Michael
Subject: RE: re: Indian Point Special Inspection
Date: Friday, May 15, 2015 4:18:00 PM

As discussed, likely not to start until Tuesday or Wednesday.

Glenn Dentel

Branch Chief responsible for oversight of Seabrook, Salem and Hope Creek
610-337-5233 (w)

From: Sheehan, Neil
Sent: Friday, May 15, 2015 1:49 PM
To: Nieh, Ho; Scott, Michael; Dentel, Glenn
Subject: re: Indian Point Special Inspection

Ray Lorson just told me the Indian Point Special Inspection won't start until Tuesday morning. Can I get confirmation of that?

BID

Fuhrmeister, Roy

From: Burritt, Arthur
Sent: Friday, May 15, 2015 2:18 PM
To: Fuhrmeister, Roy
Subject: RE: Indian Point SIT

Thanks Roy

From: Fuhrmeister, Roy
Sent: Friday, May 15, 2015 2:13 PM
To: Burritt, Arthur
Subject: Indian Point SIT

Art,

I am available for the SIT next week.

I have some experience regarding deluge systems, fire protection system piping, and floor drain system piping.

I also have some familiarity with transformer protection relay schemes, system interactions and safe shutdown.

Roy L. Fuhrmeister

BA

Fuhrmeister, Roy

From: Newman, Garrett
Sent: Friday, May 15, 2015 11:34 AM
To: Tift, Doug; Rogge, John
Cc: Fuhrmeister, Roy; Dentel, Glenn
Subject: RE: Transformer

Yes, I have not been able to get a hold of anyone in licensing yet.

From: Tift, Doug
Sent: Friday, May 15, 2015 11:11 AM
To: Rogge, John
Cc: Fuhrmeister, Roy; Dentel, Glenn; Newman, Garrett
Subject: RE: Transformer

Garrett, can you confirm with the licensee if SMIT is the manufacturer?

Thanks,
-Doug

From: Rogge, John
Sent: Friday, May 15, 2015 11:09 AM
To: Tift, Doug
Cc: Fuhrmeister, Roy; Dentel, Glenn; Newman, Garrett
Subject: Transformer

Doug on the call with the state I heard Entergy say it was a german SMIT transformer. This is what I found but I have no idea if it is the vendor. A 1989 and installed 2007. But it size etc model is unknown.

b-1a

McKenzie, Kieta

From: Sheehan, Neil
Sent: Friday, May 15, 2015 11:49 AM
To: Santos, Cayetano; Dorman, Dan; Screnci, Diane; Lew, David; Nieh, Ho; Scott, Michael
Cc: MorganButler, Kimyata
Subject: RE: SIT for Indian Point 3

No decision on an SIT had been made at that point, and the comment reflects that.

From: Santos, Cayetano
Sent: Friday, May 15, 2015 11:44 AM
To: Dorman, Dan; Screnci, Diane; Lew, David; Nieh, Ho; Scott, Michael
Cc: MorganButler, Kimyata
Subject: FW: SIT for Indian Point 3

Dan,

See observation from Amy Cabbage below. I think the quote she is referring to is a USA today article dated 5/13. Was it a misquote or just outdated information?

Tanny

Lowey Calls For Federal Investigation Into Transformer Fire At Indian Point. USA Today (5/13, Garcia, 5.01M) carries a story from the Westchester County Journal News reporting that Rep. Nita Lowey is urging "a federal investigation" into the Indian Point nuclear power plant regarding a transformer explosion that led to the shutdown of one of its reactors. The story notes that the Nuclear Regulatory Commission has three employees working at the plant, and NRC spokeswoman Diane Screnci is cited explaining that those employees "are inspecting the explosion site and the NRC has no plans for a special inspection team to visit." Indian Point spokesman Jerry Nappi is cited saying that the NRC and the company are working to discover "why a relatively new transformer failed after just eight years of operation." The NRC on Wednesday also released its report from "a routine three-month inspection" of Indian Point Units 2 and 3. Two safety problems were noted: "a degraded fire pipe in the Unit 2 turbine building that caused a leak and depressurization of the fire-water system;" and "boxes of paper and office equipment" that inspectors deemed "a fire hazard." The Lower Hudson Valley (NY) Journal News (5/13, Garcia, 366K) also carried the story.

From: Cabbage, Amy
Sent: Friday, May 15, 2015 11:21 AM
To: Santos, Cayetano; Gilles, Nanette; Castleman, Patrick; Krsek, Robert
Cc: Galloway, Melanie; Pham, Bo; MorganButler, Kimyata
Subject: RE: SIT for Indian Point 3

Thanks – just an observation that Region 1 OPA was quoted in press as saying there would not be a special inspection. I don't know if that was a misquote or just reflected preliminary info that is now out of date.

From: Santos, Cayetano
Sent: Friday, May 15, 2015 11:11 AM
To: Gilles, Nanette; Castleman, Patrick; Cabbage, Amy; Krsek, Robert
Cc: Galloway, Melanie; Pham, Bo; MorganButler, Kimyata
Subject: RE: SIT for Indian Point 3

Some additional information:

Region I will be taking with the State of NY today and will hint that they are considering a special inspection at Indian Point. The Region is coordinating with OPA.

The State of NY appears most interested in the oil release aspect of the event.

Tanny

From: Santos, Cayetano
Sent: Friday, May 15, 2015 9:11 AM
To: Gilles, Nanette; Castleman, Patrick; amy.cabbage@nrc.gov; Krsek, Robert
Cc: Galloway, Melanie; Pham, Bo; MorganButler, Kimyata
Subject: FW: SIT for Indian Point 3

All,

We just wanted to let you know that the staff is planning a Special Inspection at Indian Point 3 because of water accumulation in the switchgear room that occurred as a result of the transformer fire. See email below from Dan Dorman.

Tanny

From: Dorman, Dan
Sent: Thursday, May 14, 2015 5:35 PM
To: Johnson, Michael
Cc: Tracy, Glenn; Holian, Brian; Dean, Bill; MorganButler, Kimyata; Nieh, Ho; Screnci, Diane; Sheehan, Neil; Tift, Doug; McNamara, Nancy
Subject: SIT for Indian Point 3

Mike (and actors),

As part of our ongoing resident inspector review of the transformer explosion at Indian Point Unit 3 last Saturday, we have been focused on an accumulation of water in the Unit 3 switchgear room while the deluge system was operating during the first 25 minutes of the event. The switchgear room contains both trains of switchgear and excess flooding could put the plant in a station blackout. The 0309 assessment put the risk in the overlap range between resident follow-up and Special Inspection Team. The licensee has postulated the source of water as the deluge valve actuators which continue to bleed water off the deluge line following actuation. There is also indication that the deluge capacity overwhelms the site drainage to the discharge canal, potentially causing backup to the switchgear room. Region I has concluded that a Special Inspection Team is appropriate to independently verify the source of flooding and to ensure a full understanding of the sequence of events and the licensee's performance in identifying and terminating the flooding.

We are developing a team and charter and expect them to be onsite by the middle of next week. We will be developing appropriate press release and stakeholder outreach plans in the next few days.

Dan

Tifft, Doug

From: Sheehan, Neil
Sent: Friday, May 15, 2015 12:12 PM
To: McNamara, Nancy; Tifft, Doug; Weil, Jenny
Subject: FW: SIT for Indian Point 3

From: Santos, Cayetano
Sent: Friday, May 15, 2015 11:59 AM
To: Gilles, Nanette
Cc: MorganButler, Kimyata; Sheehan, Neil
Subject: RE: SIT for Indian Point 3

Yes, there is coordination with OCA.

From: Gilles, Nanette
Sent: Friday, May 15, 2015 11:51 AM
To: Santos, Cayetano
Subject: RE: SIT for Indian Point 3

Tanny,

Has there been any coordination with OCA, given the high level of interest from the NY Congressional delegation?

Nan

From: Santos, Cayetano
Sent: Friday, May 15, 2015 11:11 AM
To: Gilles, Nanette; Castleman, Patrick; Cubbage, Amy; Krsek, Robert
Cc: Galloway, Melanie; Pham, Bo; MorganButler, Kimyata
Subject: RE: SIT for Indian Point 3

Some additional information:

Region I will be taking with the State of NY today and will hint that they are considering a special inspection at Indian Point. The Region is coordinating with OPA.

The State of NY appears most interested in the oil release aspect of the event.

Tanny

From: Santos, Cayetano
Sent: Friday, May 15, 2015 9:11 AM
To: Gilles, Nanette; Castleman, Patrick; amy.cubbage@nrc.gov; Krsek, Robert
Cc: Galloway, Melanie; Pham, Bo; MorganButler, Kimyata
Subject: FW: SIT for Indian Point 3

All,

We just wanted to let you know that the staff is planning a Special Inspection at Indian Point 3 because of water accumulation in the switchgear room that occurred as a result of the transformer fire. See email below from Dan Dorman.

Tanny

From: Dorman, Dan

Sent: Thursday, May 14, 2015 5:35 PM

To: Johnson, Michael

Cc: Tracy, Glenn; Holian, Brian; Dean, Bill; MorganButler, Kimyata; Nieh, Ho; Screnci, Diane; Sheehan, Neil; Tifft, Doug; McNamara, Nancy

Subject: SIT for Indian Point 3

Mike (and actors),

As part of our ongoing resident inspector review of the transformer explosion at Indian Point Unit 3 last Saturday, we have been focused on an accumulation of water in the Unit 3 switchgear room while the deluge system was operating during the first 25 minutes of the event. The switchgear room contains both trains of switchgear and excess flooding could put the plant in a station blackout. The 0309 assessment put the risk in the overlap range between resident follow-up and Special Inspection Team. The licensee has postulated the source of water as the deluge valve actuators which continue to bleed water off the deluge line following actuation. There is also indication that the deluge capacity overwhelms the site drainage to the discharge canal, potentially causing backup to the switchgear room. Region I has concluded that a Special inspection Team is appropriate to independently verify the source of flooding and to ensure a full understanding of the sequence of events and the licensee's performance in identifying and terminating the flooding.

We are developing a team and charter and expect them to be onsite by the middle of next week. We will be developing appropriate press release and stakeholder outreach plans in the next few days.

Dan

Tifft, Doug

From: Moreno, Angel
Sent: Friday, May 15, 2015 12:55 PM
To: Tifft, Doug
Subject: RE: SIT for Indian Point 3

Thanks! –Angel

From: Tifft, Doug
Sent: Friday, May 15, 2015 12:54 PM
To: Moreno, Angel
Subject: RE: SIT for Indian Point 3

Yes. Press release is currently planned for Monday. I'll keep you updated.

-Doug

From: Moreno, Angel
Sent: Friday, May 15, 2015 12:52 PM
To: Tifft, Doug
Subject: RE: SIT for Indian Point 3

Hey Doug, I assume this will be made public before the public meeting right?

-Angel

From: Tifft, Doug
Sent: Friday, May 15, 2015 8:31 AM
To: Moreno, Angel
Subject: FW: SIT for Indian Point 3

FYI. We are discussing notification sequence this morning.

From: Dorman, Dan
Sent: Thursday, May 14, 2015 5:39 PM
To: Johnson, Michael
Cc: Tracy, Glenn; Holian, Brian; Dean, Bill; MorganButler, Kimyata; Nieh, Ho; Screnci, Diane; Sheehan, Neil; Tifft, Doug; McNamara, Nancy
Subject: RE: SIT for Indian Point 3

Sorry, misfired ... completed message below

From: Dorman, Dan
Sent: Thursday, May 14, 2015 5:35 PM
To: Johnson, Michael
Cc: Tracy, Glenn; Holian, Brian; Dean, Bill; MorganButler, Kimyata; Nieh, Ho; Screnci, Diane; Sheehan, Neil; Tifft, Doug; McNamara, Nancy
Subject: SIT for Indian Point 3

Mike (and actors),

As part of our ongoing resident inspector review of the transformer explosion at Indian Point Unit 3 last Saturday, we have been focused on an accumulation of water in the Unit 3 switchgear room while the deluge system was operating during the first 25 minutes of the event. The switchgear room contains both trains of switchgear and excess flooding could put the plant in a station blackout. The 0309 assessment put the risk in the overlap range between resident follow-up and Special Inspection Team. The licensee has postulated the source of water as the deluge valve actuators which continue to bleed water off the deluge line following actuation. There is also indication that the deluge capacity overwhelms the site drainage to the discharge canal, potentially causing backup to the switchgear room. Region I has concluded that a Special inspection Team is appropriate to independently verify the source of flooding and to ensure a full understanding of the sequence of events and the licensee's performance in identifying and terminating the flooding.

We are developing a team and charter and expect them to be onsite by the middle of next week. We will be developing appropriate press release and stakeholder outreach plans in the next few days.

Dan

Setzer, Thomas

From: McKenzie, Kieta
Sent: Friday, May 15, 2015 8:27 AM
To: Setzer, Thomas
Cc: Pinkham, Laurie
Subject: FW: PNO-I-15-002: Indian Point Nuclear Power Station Unit No. 3: Shutdown Greater than 72 Hours due to Reactor Trip Following #31 Main Transformer Failure

Please see below email – PN is now posted.

THANKS!!

Kieta

From: WebContractor Resource
Sent: Friday, May 15, 2015 8:15 AM
To: McKenzie, Kieta
Cc: WebWork Resource; Thompson, Margaret
Subject: RE: PNO-I-15-002: Indian Point Nuclear Power Station Unit No. 3: Shutdown Greater than 72 Hours due to Reactor Trip Following #31 Main Transformer Failure

Good Morning Kieta,

This has been posted live to the public website.

<http://www.nrc.gov/reading-rm/doc-collections/event-status/prelim-notice/2015/>

Thank you.

Maureen Lawrie
Web Team

From: WebWork Resource
Sent: Friday, May 15, 2015 7:53 AM
To: WebContractor Resource
Subject: FW: PNO-I-15-002: Indian Point Nuclear Power Station Unit No. 3: Shutdown Greater than 72 Hours due to Reactor Trip Following #31 Main Transformer Failure

Please post. I'm not sure of the history, but ML15131A407 is available in WBA.

Thanks,
Adam
(301) 287-0826

b-16

Find me on Lync!



From: McKenzie, Kieta
Sent: Friday, May 15, 2015 7:25 AM
To: WebWork Resource
Subject: FW: PNO-I-15-002: Indian Point Nuclear Power Station Unit No. 3: Shutdown Greater than 72 Hours due to Reactor Trip Following #31 Main Transformer Failure
Importance: High

Good morning,

Below/attached is a Preliminary Notification that was processed by my co-worker on Monday, May 11th. She is out of the office today and I was informed by my Senior Project Engineer that this Preliminary Notification has yet to show on the public website. I'm not sure if my co-worker forwarded this to you for replication (and I do not have the email from ADAMS DPC) – what would need to be done to get this replicated??

Thanks in advance!!

THANKS!!

Kieta

From: Thompson, Margaret
Sent: Monday, May 11, 2015 3:11 PM
To: R1-DL-PN; PN_Distribution; Burritt, Arthur; Setzer, Thomas; Nieh, Ho; Screnci, Diane; Sheehan, Neil; McNamara, Nancy; Tift, Doug; Lew, David; Dorman, Dan; Scott, Michael; Stewart, Scott; Bolger, Allyce; Newman, Garrett; Hochmuth, Diane
Cc: McKenzie, Kieta
Subject: PNO-I-15-002: Indian Point Nuclear Power Station Unit No. 3: Shutdown Greater than 72 Hours due to Reactor Trip Following #31 Main Transformer Failure

PNO-I-15-002: Indian Point Nuclear Power Station Unit No. 3: Shutdown Greater than 72 Hours due to Reactor Trip Following #31 Main Transformer Failure

ADAMS Document Accession No.: ML15131A407
ADAMS Document Profile As: Public/Non-Sensitive

Facility
Entergy Nuclear Operations, Inc.
Indian Point Nuclear Generating Unit No. 3
Buchanan, NY
Docket No. 50-286
License No. DPR-64

Margie Thompson
Administrative Assistant

McKenzie, Kieta

From: Sheehan, Neil
Sent: Saturday, May 16, 2015 2:22 PM
To: Dorman, Dan; Lew, David; Nieh, Ho; Scott, Michael
Subject: Fw: Entergy Continues Investigation of Failed Transformer, Spilled Dielectric Fluid at Indian Point Energy Center

Neil Sheehan
NRC Public Affairs Officer
Sent from NRC Blackberry

From: Indian Point Energy Center [mailto:information@safesecurevital.org]
Sent: Friday, May 15, 2015 06:31 PM
To: Sheehan, Neil
Subject: Entergy Continues Investigation of Failed Transformer, Spilled Dielectric Fluid at Indian Point Energy Center



Entergy Continues Investigation of Failed Transformer, Spilled Dielectric Fluid at Indian Point Energy Center

Buchanan – Entergy continues to investigate the cause of the failed transformer and subsequent spill of the transformer’s dielectric fluid following the event which occurred on May 9. The failed transformer is located outdoors in the transformer yard and external to any buildings that contain radioactive materials.

Preliminary assessments of the moat system designed to catch the transformer’s dielectric fluid following a transformer failure, along with drains and other areas around the transformer, indicate as of today approximately 8,300 gallons of dielectric fluid have been recovered or were combusted during the fire. Entergy will vigorously investigate and seek to recover as much of the remaining approximately 16,000 gallons as possible. Visual observations in the discharge canal and the Hudson River have not indicated significant quantities of transformer oil, and further investigation and aggressive recovery efforts at the site will continue. These efforts likely are anticipated to take several months, and will be coordinated with the New York State Department of Environmental Conservation (NYSDEC).

While environmental mitigation crews continue to conduct their investigation to identify potential transformer oil onsite, additional mitigative protective measures have been installed in the plant’s discharge canal to prevent the potential release of transformer oil to the river while the investigation continues.

Dielectric fluid is a clear, light mineral oil that acts as an electrical insulator and coolant inside transformers when they are operational. The oil in the failed transformer contained no PCBs (polychlorinated biphenyls).

“Any spill of transformer oil to the environment is not in accordance with our standards, and Entergy will be accountable for any violation of our responsibility,” said Bill Mohl, president of Entergy Wholesale Commodities. “We take this commitment very seriously, which is why we have been working closely with the U.S. Coast Guard and NYSDEC to identify and respond to reports of transformer oil in the river in order to minimize any potential impact. We will continue to be open and transparent throughout the process, provide regular updates to our stakeholders, and continue our commitment to good environmental stewardship,” added Mohl. “We also are committed to learning from and evaluating our emergency preparedness program in response to this event.”

Engineers and transformer experts are working to identify a cause of the transformer failure and Entergy will share that information when it becomes available, which is estimated to be by June 30.

An automatic sprinkler system, along with trained onsite firefighting personnel, extinguished the fire using water and fire retardant foam. In addition, Entergy environmental professionals and contractors swiftly responded following the event and placed protective oil booms in the plant’s discharge canal and river to capture fluid and mitigate potential releases to the river. Teams were also dispatched to begin monitoring for any fluid that may have reached the River.

Unit 3 remains safely shutdown. Unit 2 continues to operate at full power and has been online for 423 continuous days.

Indian Point Energy Center, in Buchanan, N.Y., is home to two operating nuclear power plants, unit 2 and unit 3, which generate approximately 2,000 megawatts of electricity and supply about 25 percent of power used annually in New York City and Westchester County. Entergy Corporation is an integrated energy company engaged primarily in electric power production and retail distribution operations. Entergy owns and operates power plants with approximately 30,000 megawatts of electric generating capacity, including nearly 10,000 megawatts of nuclear power, making it one of the nation’s leading nuclear generators.

Indian Point Energy Center’s online address is www.safesecurevital.com.

Entergy's online address is www.entergy.com

Twitter: [@Indian_Point](https://twitter.com/Indian_Point)

Facebook: [Facebook.com/IndianPointEnergy](https://www.facebook.com/IndianPointEnergy)

You are receiving this email because you signed up on our [website](#). You can [unsubscribe](#) at any time.

Siwy, Andrew

From: Burritt, Arthur
Sent: Saturday, May 16, 2015 12:34 PM
To: Dentel, Glenn
Subject: RE: Turnover for SIT

Categories: Training

Thanks, great job. I will see you Monday

From: Dentel, Glenn
Sent: Friday, May 15, 2015 4:18 PM
To: Burritt, Arthur
Cc: Setzer, Thomas
Subject: Turnover for SIT

Great job by Tom and Garrett. Status of products:

- MC 0309; Final Draft to Ho – Wayne Schmidt's risk and my comments incorporated. Initially drafted from Tom and revised by Garrett
- SIT Charter; Draft by Tom, Garrett some revisions incorporated. The scope needs to be further refined – Dorman and Nieh had some thoughts.
- Team Composition – Art you are the team manager. E-mail sent to staff waiting on response noon Monday. Team to go out Tuesday or Wednesday
- Press Release – Neil has drafted, Ho reviewed. Original plan was to issue Monday. Neil's thoughts are probably issue Tuesday
- Other Communication
 - Internal: 1) Currently in SIT/AIT overlap therefore Region I needs to consult with NRR on decision. Ho has done at the lower levels. On Monday, Dan Dorman will reach out to Bill Dean. Once onsite will need to assess need to upgrade to AIT. 2) provided information to R1 EDO contact to provide to Commission; 3) Supplemental PN may be considered – your staff is still evaluating the criteria
 - 4) New Blog entry to be made by Neil when press release is issued
 - External: 1) Preplanned call with state to discuss the event, discussed possibility of special inspection team – some followup information requests (Doug tracking); 2) HQ received letter, Doug Pickett looking to respond following press release

I'm in most of the day Monday. You probably should ask for in-office help on Monday and Tuesday.

Glenn Dentel

Branch Chief responsible for oversight of Seabrook, Salem and Hope Creek
610-337-5233 (w)

Siwy, Andrew

From: Scott, Michael
Sent: Saturday, May 16, 2015 2:56 PM
To: Dentel, Glenn
Subject: Re: Solicitation for Indian Point Special Inspection Team; Respond by Noon on Monday May 18th

Well done - thanks Glenn!

On: 15 May 2015 13:02, "Dentel, Glenn" <Glenn.Dentel@nrc.gov> wrote:
All,

The purpose of this e-mail is to solicit reactor inspectors for their interest in participating on the Indian Point Special Inspection team.

On May 9, 2015, Indian Point Unit 3 experienced an automatic reactor trip as a result of a failure of the #31 main transformer. A Notification of Unusual Event (UE) was declared for an explosion or fire within the station's Protected Area. The fire was initially extinguished by the station's deluge system. The fire reignited twice and was extinguished by both the site fire brigade and two offsite fire departments who responded to the event. The UE was exited at 9:03 p.m.

The reactor trip was uncomplicated. All control rods inserted into the reactor core, and all safety systems responded as designed. An amount of water accumulated in the safety-related switchgear room from the fire protection deluge system and made its way into the switchgear room through a floor drain. This water has the potential to flood the switchgear room, cause the inoperability of multiple safety-related systems and components, and cause an event as severe as a station blackout. The focus of the Special Inspection Team is to review the unexpected interaction of the deluge system and the switchgear room.

The team will be onsite likely starting May 19 or 20th through the end of the week. We are looking for a Team Leader and several other additional inspectors. In particular, inspectors with experience in operator response, fire protection and fire protection piping, and general operations will be ideally suited.

If you are interested and available, then please convey your interest to your Branch Chief and Art Burritt by noon on Monday, May 18th. We will ultimately make a collegial decision to staff this inspection based on organizational needs, skill set, developmental needs, and availability.

If you are not available for this particular opportunity but wish to be considered for future reactive or supplemental inspection opportunities, then please be sure to convey your interests to your Branch Chief.

Thank You,

Glenn Dentel
Chief, DRP Branch 3



Klukan, Brett

From: Barkley, Richard
Sent: Monday, May 18, 2015 4:29 PM
To: Klukan, Brett; Setzer, Thomas; Screnci, Diane
Subject: RE: "One Pagers" for Indian Point transformers, and Special Inspection Team

Yep – That is the last thing Ho will mention.

From: Klukan, Brett
Sent: Monday, May 18, 2015 4:25 PM
To: Setzer, Thomas; Screnci, Diane; Barkley, Richard
Subject: RE: "One Pagers" for Indian Point transformers, and Special Inspection Team

Diane & Richard,

See below. In case I start getting questions shouted out at the outset of the meeting, I'd like to be able to say that the NRC plans to talk about it as part of its opening presentation.

I just wanted to make sure that that was actually the case.

Thanks.

Cheers,
Brett

From: Setzer, Thomas
Sent: Monday, May 18, 2015 4:06 PM
To: Klukan, Brett
Subject: RE: "One Pagers" for Indian Point transformers, and Special Inspection Team

Please check with Rich Barkley or Diane. They were crafting some speaking parts for Ho and Art and I haven't seen the latest revision. I cant say for sure whether or not this transformer event was included.

TOM

From: Klukan, Brett
Sent: Monday, May 18, 2015 4:00 PM
To: Setzer, Thomas
Subject: RE: "One Pagers" for Indian Point transformers, and Special Inspection Team

Tom,

Is Art or Ho planning to say anything about the event as part of the opening presentation? Just being curious.

Thanks.

Cheers,
Brett

From: Setzer, Thomas

Sent: Monday, May 18, 2015 3:30 PM

To: Nieh, Ho; Dorman, Dan; Burritt, Arthur; Lamb, Christopher; Stewart, Scott; Newman, Garrett; Bolger, Allyce; Screnci, Diane; McNamara, Nancy; Milligan, Patricia; McHale, John; McCoppin, Michael; Tammara, Seshagiri; Noggle, James; Pickett, Douglas; Dudek, Michael; Pinkham, Laurie; Dacus, Eugene; Klukan, Brett; Weil, Jenny; Boska, John; Gilbertson, Anders; Rich, Sarah; Fuhrmeister, Roy; Barkley, Richard; MorganButler, Kimyata

Subject: "One Pagers" for Indian Point transformers, and Special Inspection Team

Importance: High

Good Afternoon-

I attached two "One Pagers" for your use. One notes the history of Indian Point transformer issues since 2007. The other gives an event summary, timeline, and key messages for the #31 transformer failure on May 9. We are launching a special inspection team (SIT) to investigate water that accumulated in the safety related Unit 3 switchgear room. This water is postulated to have come from the deluge system that was activated to extinguish the transformer fire. Our manual chapter 0309 risk assessment revealed that an SIT was warranted. The team will begin onsite inspection tomorrow with me as the team leader.

VR
TOM

ret.
Tifft, Doug

From: Nieh, Ho
Sent: Monday, May 18, 2015 3:07 PM
To: McNamara, Nancy; Tifft, Doug; Screnci, Diane; Sheehan, Neil
Cc: Dorman, Dan; Lew, David; Burritt, Arthur; Setzer, Thomas; MorganButler, Kimyata; Stewart, Scott; Newman, Garrett; Scott, Michael; Lorson, Raymond; Trapp, James
Subject: 2015-05-18 IP3 SIT Key Messages.docx
Attachments: 2015-05-18 IP3 SIT Key Messages.docx

IP3 SIT one-pager for use in our communications.

Please let me know if you have any questions or comments.

Thanks,

Ho

B-21

INDIAN POINT UNIT 3 SPECIAL INSPECTION – MAY 2015

Background

On May 9, 2015, at 5:50 p.m., Indian Point Unit 3 experienced an automatic reactor trip as a result of a failure of the #31 main transformer and subsequent main generator lockout and turbine trip. A Notification of Unusual Event (UE) was declared at 6:01 p.m. for an explosion or fire within the station's Protected Area. The fire was initially extinguished by the station's deluge system. The fire then reignited twice and was extinguished by both the site fire brigade and two offsite fire departments who responded to the event. The UE was exited at 9:03 p.m.

The reactor trip was uncomplicated. All control rods inserted into the reactor core, and all safety systems responded as designed. The NRC Resident Inspectors responded to the site and independently confirmed that the plant was in a stable, safe condition. Resident Inspectors conducted immediate follow-up inspections of the plant and operator response to the event.

Unit 3 is currently in Mode 4, Hot Shutdown, with normal offsite electrical power available and decay heat being removed by the residual heat removal system. Unit 2 continues to operate at 100 percent power.

Water accumulation was noted in a safety-related switchgear room (reports ranged from 1" to 2"). This water is believed to have come from the fire protection deluge system and made its way into the switchgear room through a floor drain.

Key Messages

In order to better understand what occurred, the NRC is launching a Special Inspection at the plant on Tuesday, May 19. The 3-member team will evaluate, among other things, how the water – apparently totaling an inch or two on the room's floor – ended up in the room; and the potential for a significantly larger volume of water to build up and adversely impact the electrical equipment.

The electrical equipment was not affected by the water during the May 9th event, and the plant was safely shut down. The plant remains out of service while work to install a replacement transformer is carried out.

The NRC applies risks insights and specific knowledge of plants when determining whether to perform a follow-up inspection and what type. In this case, the NRC decided it was appropriate to conduct a Special Inspection, the first level of "reactive" reviews performed in response to an event. The agency performs such inspections to independently evaluate and assess what occurred during an event, as well as any plans by the plant's owner to fix related problems.

In addition to the Special Inspection, the NRC is continuing to review the transformer failure, operator and equipment response during the event, and other issues. A report containing the findings of the Special Inspection will be issued within 45 days after the formal conclusion of the review.

Siwy, Andrew

From: Stewart, Scott
Sent: Monday, May 18, 2015 12:31 PM
To: Burritt, Arthur
Cc: Pickett, Douglas; Newman, Garrett; Rich, Sarah; Bolger, Allyce; Pinson, Brandon; Setzer, Thomas; Schussler, Jason
Subject: Oil updates from IPEC

FYI -

Current oil numbers (the amount of oil in the transformer has changed from original 20700 gal):

Total oil in transformer 24300 gal

Collected oil 8300 gal

Unaccounted for oil 16000 gal includes,

Burned oil estimate 2300 gal

Released to Hudson oil estimate 3000 gal

Entergy CEO in discussion with NY Governor has agreed to conduct a review of emergency preparedness and fire protection.

Siwy, Andrew

From: Burritt, Arthur
Sent: Monday, May 18, 2015 4:31 PM
To: McNamara, Nancy
Subject: RE: State observation of SIT

No for sure, but most likely 11:00 am

From: McNamara, Nancy
Sent: Monday, May 18, 2015 4:22 PM
To: Burritt, Arthur
Subject: RE: State observation of SIT

Do we have an entrance time?

From: Burritt, Arthur
Sent: Monday, May 18, 2015 4:22 PM
To: McNamara, Nancy
Subject: RE: State observation of SIT

The licensee has been informed of the SIT

From: McNamara, Nancy
Sent: Monday, May 18, 2015 12:35 PM
To: Burritt, Arthur
Subject: State observation of SIT

Art, we informed the SLO last Friday that we would most likely be conducting an SIT. Since the State Engineer is on maternity leave, the State is considering whether someone will be observing the inspection or not. As soon as we have the definite go and an entrance time, please let me know so I can let them know.

The SLO won't reach out to anyone in the State about the SIT until the licensee has been properly informed.

B-23

McKenzie, Kieta

From: Stewart, Scott
Sent: Tuesday, May 19, 2015 3:25 PM
To: Rogge, John; Sheehan, Neil; Wentzel, Michael; Scott, Michael; Nieh, Ho; Burritt, Arthur; Setzer, Thomas; Lorson, Raymond; Pickett, Douglas; Patel, Jigar (R1); Gray, Mel; Fuhrmeister, Roy
Cc: Orr, Dan; Dumont, Louis; Fuhrmeister, Roy; Galbreath, Stephanie; Rady, Jeff; Young, Keith; Richmond, John
Subject: RE: Wall Street Journal questions on Indian Point transformers

Daily visuals include checks for alarms, temperatures, cooling pump and fan status, and general checks for leaks as noted. Entergy also did periodic thermography, oil samples, and continuous monitoring using the installed Serveron unit(s).

In maintenance rule, since the unit caused a trip, Entergy will have to do an evaluation of the adequacy of their periodic monitoring, which we will check in our baseline inspection program.

From: Rogge, John
Sent: Tuesday, May 19, 2015 1:09 PM
To: Sheehan, Neil; Wentzel, Michael; Scott, Michael; Nieh, Ho; Burritt, Arthur; Setzer, Thomas; Lorson, Raymond; Pickett, Douglas; Patel, Jigar (R1); Gray, Mel; Stewart, Scott; Fuhrmeister, Roy
Cc: Orr, Dan; Dumont, Louis; Fuhrmeister, Roy; Galbreath, Stephanie; Rady, Jeff; Rogge, John; Young, Keith; Richmond, John
Subject: RE: Wall Street Journal questions on Indian Point transformers

Simple questions but answers are complicated. The IEEE has multiple standards for maintenance but there are too many to attach. Below is a list of items to check.

Simply, Transformers are usually covered in the Maintenance Rule, which is a high level program that depends on proper maintenance practices. See 2iii for non safety related ...whose failure could cause a reactor scram....

The maintenance rule requires monitoring and may be the reason they went from 4 to 2 years on preventive maintenance for effectiveness.. Maybe the Resident can fill in the why. What I think they are saying is that they look every outage as opposed to every other when the transformer is electrically accessible.

But maintenance of what, that is a very generic term as many things fall under this.. Clearly daily checks via visual observation by an operator, monthly or daily oil samples, busing double testing at 10 years intervals.

BAH

Advanced Engineering Qualification – Electrical
Individual Study Activity

Windings	DC Resistance
	Turns Ratio
	Percent Impedance/Leakage Reactance
	Sweep Frequency Response (SFRA)
	Doble Test
	Capacitance
Core	Excitation Current/Watts Loss
	Power Factor/Dissipation Factor
	Insulation Resistance
Tanks and Auxiliaries	Ground Test
	Fault Pressure Relay (functional test)
Cooling System	Pressure Relief Device (visual)
	Buchholz Relay (visual for gas)
	Top Oil Temperature Indicator
	Winding Temperature Indicator
	Infrared Temperature Scan
	Fault Analyzer (ultrasonic test)
	Sound Analysis (sonic)
	Vibration Analyzer
	Cleaning (fan blades/radiators)
	Fans and Controls (fan)
Bushings and Arresters	Oil Pumps (pump rotation/flow)
	Pump Bearings (vibration, sound)
	Radiator (valve lineup)
Conservator	Infrared Temperature Scan
	Capacitance (Doble test)
	Dielectric Loss (Watts)
	Power Factor
	Infrared Temperature Scan
Insulating Oil	Oil Level (bushings only)
	Visual Inspection (cracks/chips)
	Visual Inspection (leaks, diaphragm)
	Inert Air System (desiccant color)
	Level Gauge Calibration
	Figure 3 - TESTING
	Power Factor/Dissipation Factor (Doble)
Interfacial Tension	
Acid Number	
Furans	
Oxygen Inhibitor	

Figure 3 – Testing Summary

From: Sheehan, Neil
Sent: Tuesday, May 19, 2015 12:05 PM
To: Wentzel, Michael; Scott, Michael; Nieh, Ho; Burritt, Arthur; Setzer, Thomas; Lorson, Raymond; Pickett, Douglas; Rogge, John
Subject: RE: Wall Street Journal questions on Indian Point transformers

Good point, Mike

From: Wentzel, Michael *HW*
Sent: Tuesday, May 19, 2015 12:00 PM
To: Scott, Michael; Sheehan, Neil; Nieh, Ho; Burritt, Arthur; Setzer, Thomas; Lorson, Raymond; Pickett, Douglas; Rogge, John
Subject: RE: Wall Street Journal questions on Indian Point transformers

Neil,

About the first bullet, I also wanted to add that the staff's position on the NYS-8 (the transformers contention) is that, as active components, the Maintenance Rule, along with existing monitoring, surveillance, inspection and testing programs, serves the purpose for electrical transformers that an aging management program would serve for a passive component. This position was affirmed in the Commission's decision overturning the ASLBP's ruling.

Thanks,
Mike

From: Scott, Michael

Sent: Tuesday, May 19, 2015 11:50 AM

To: Sheehan, Neil; Nieh, Ho; Burritt, Arthur; Setzer, Thomas; Lorson, Raymond; Pickett, Douglas; Wentzel, Michael; Rogge, John

Subject: RE: Wall Street Journal questions on Indian Point transformers

I will reply on the first bullet. We should not speculate on the cause of the transformer failure, but rather we will inspect the issue and review the licensee's failure analysis. When we have sufficient information about the cause, we will reach conclusions about the adequacy of the licensee's maintenance of the equipment. Although this transformer is nonsafety, we are concerned about its reliability since, as was amply demonstrated, its failure can lead to a plant transient. Although it may not be scoped in aging management, the licensee is required to monitor the performance of components such as this one whose failure can cause a reactor scram.

Regarding the rest – John Rogge, can you please answer these?

Thanks

Mike

From: Sheehan, Neil

Sent: Tuesday, May 19, 2015 11:06 AM

To: Nieh, Ho; Scott, Michael; Burritt, Arthur; Setzer, Thomas; Lorson, Raymond; Pickett, Douglas; Wentzel, Michael

Subject: Wall Street Journal questions on Indian Point transformers

A reporter for the Wall Street Journal is working on a follow-up story for tomorrow on the Indian Point 3 transformer failure. He has posed several questions that I could use your help with. They are:

- The New York AG's Office filed a contention in the Indian Point license renewal hearing that involved the aging management of transformers. The contention was upheld by the ASLB but overturned by the Commission, which ruled that transformers are active components and therefore do not fall under aging management programs because they are not passive. The AG's Office is arguing that if the transformers were subjected to aging management, the recent transformer failure might not have occurred. Does the NRC consider this to be true? If not, why not?
- Entergy told the newspaper it inspects the transformers every two years (a change from four years that it apparently adopted after an earlier transformer failure). Is this interval common for nuclear power plants?
- What is the normal period of inspection for transformers for nuclear power plants?
- Are there any nuclear power plants that inspect transformers on a monthly interval?

The reporter is asking for responses this afternoon.

Siwy, Andrew

From: Stewart, Scott
Sent: Tuesday, May 19, 2015 9:35 AM
To: Burritt, Arthur
Cc: Setzer, Thomas; Rich, Sarah; Bolger, Allyce; Pinson, Brandon
Subject: FW: Response to Messrs. Brodsky and Gallay RE: Indian Point 3 Transformer Fire and Implications of Exemptions from Appendix R
Attachments: ML12172A370.pdf

From Doug's email:

"NRC Region I inspectors will investigate the cause of the transformer failure and fire,"

I suppose we should plan a PIR sample to complete this commitment to Mr. Brodsky and Mr. Gallay? The licensee says they will have a cause determination done by the end of June. Scott

From: Pickett, Douglas
Sent: Monday, May 18, 2015 4:03 PM
To: richardbrodsky@msn.com; pgallay@riverkeeper.org
Cc: Dudek, Michael; Frumkin, Daniel; Burritt, Arthur; McNamara, Nancy; Tiffit, Doug; Screnci, Diane; Sheehan, Neil; Stewart, Scott; Beasley, Benjamin; Wilson, George
Subject: Response to Messrs. Brodsky and Gallay RE: Indian Point 3 Transformer Fire and Implications of Exemptions from Appendix R

Dear Messrs. Brodsky and Gallay –

I am responding to your email to Chairman Burns of the U.S. Nuclear Regulatory Commission dated May 11, 2015, regarding the transformer failure and fire at Indian Point Unit No. 3 on May 9, 2015. In your email (ADAMS Accession No. ML15133A087), you referenced previous exemptions granted to the Indian Point licensee with regard to fire protection requirements found in 10 CFR Part 50, Appendix R, Section III.G.2. Specifically, you requested:

- 1 – A complete list of all exemptions to Appendix R fire safety regulations at Indian Point,
 - 2 – A Commission inquiry into whether such exemptions were implicated in the recent incident and fire,
- and
- 3 – A public meeting to discuss the same.

I have attached a listing of all exemptions, including fire protection, granted by the NRC to Indian Point Units 2 and 3. The list is publicly available in ADAMS at Accession No. ML12172A370. While the list was compiled on June 20, 2012, it remains current as no exemptions, including fire protection, have been granted since the list was created.

The NRC staff evaluated your concern regarding Indian Point exemptions and has confirmed that the exemptions granted against Section III.G.2 of Appendix R did not contribute to the transformer fire nor did they complicate the licensee's response to the event.

NRC Region I inspectors will investigate the cause of the transformer failure and fire, the events at the plant, and the licensee's response. Their results will be published in future inspection reports.

Finally, the Indian Point Annual Assessment meeting will be held at the Westchester Marriott, Grand Ballroom Salons D and E, 670 White Plains Rd, Tarrytown, NY, on Wednesday evening, May 20, beginning at 7:00 p.m. (NRC Public Meeting 20150737). The meeting is open to the public and the May 9th transformer failure and

fire at Indian Point Unit 3 will be discussed by the NRC staff. You, and any member of the public, are welcome to attend and ask questions of the staff.

I hope I have been responsive to your concerns.

Sincerely,

Douglas V. Pickett, Senior Project Manager
Indian Point Nuclear Generating Unit Nos. 2 & 3
James A FitzPatrick Nuclear Power Plant
Douglas.Pickett@nrc.gov
301-415-1364

McNamara, Nancy

From: Alyse L. Peterson <Alyse.Peterson@nyserda.ny.gov>
Sent: Tuesday, May 19, 2015 8:46 AM
To: McNamara, Nancy
Subject: RE: Indian Point SIT

Thanks Nancy. I am not badged and neither are Tim Rice and Cini. With Bridget on leave we won't be able to observe the SIT. We would certainly welcome a summary/briefing after the inspection.

-----Original Message-----

From: McNamara, Nancy [<mailto:Nancy.McNamara@nrc.gov>]
Sent: Monday, May 18, 2015 8:14 PM
To: Alyse L. Peterson
Subject: Indian Point SIT

Hi Alyse. The NRC will be launching a Special Inspection Team tomorrow (Tuesday) to review/assess the main transformer fire. The entrance will be 11:00 am. I will send you a copy of the Charter in the morning. Obviously, the MOU allows you to observe and in the past we've extended that to Bridget. So, let's discuss if you are thinking of sending someone else. At a minimum, they must be badged. Otherwise, we can arrange to a summary/briefing after the inspection. I'll also let you know the exit date and time when I get it in case someone from the State wants to observe just the exit.

The licensee has been informed. The public will be informed via an NRC press release sometime Tuesday morning. We will be telling the Counties and Congressionals in the morning just before the PR.

Regards,
Nancy
Email secured by Check Point

B-116

McNamara, Nancy

From: McNamara, Nancy
Sent: Tuesday, May 19, 2015 10:04 AM
To: alp@nyserda.org; cini.abraham@dps.ny.gov; greeleyd@co.rockland.ny.us; jmw3@westchestergov.com; Delborgo, Dennis (drd2@westchestergov.com); Albanese, Raymond (rla1@westchestergov.com); Fisher, Shannon (SFisher@orangecountygov.com); levenbergD@assembly.state.ny.us; Fisch, Theodore (DHSES) (Theodore.Fisch@dhses.ny.gov)
Cc: Musick, David (David.Musick@fema.dhs.gov); Cullen, William R (William.Cullen@fema.dhs.gov); giardina.paul@epa.gov; Jenny.Weil@nrc.gov
Subject: NRC Conducting Special Inspection Re: IP U-3 Transformer Fire Event
Importance: High

Good Morning, everyone. In order to better understand what occurred during the May 9, 2015, Indian Point Unit 3 Main Transformer Fire, the NRC is launching a Special Inspection (SIT), this morning, May 19, 2015. The NRC decided it was appropriate to conduct a Special Inspection, the first level of "reactive" reviews performed in response to an event. The agency performs such inspections to independently evaluate and assess what occurred during an event, as well as any plans by the plant's owner to fix related problems.

The inspection team will be comprised of 3 technical experts from the NRC Region I office and will focus to better understand the presence of a small amount of water found in an electrical supply room. Although none of the electrical equipment became wet or experienced any damage or failures, the room in question does contain electrical equipment that provides power to plant safety systems. The team will be tasked with gathering information on how the water accumulated in the room and the potential for impacts had there been a significantly larger volume of water.

In addition to the Special Inspection, the NRC is continuing to review the transformer failure, operator and equipment response during the event, and other issues. A report containing the findings of the Special Inspection will be issued within 45 days after the formal conclusion of the review.

The NRC will be sending out a press release on the SIT later this morning.

The plant remains out of service while work to install a replacement transformer is carried out.

Any questions, please feel free to contact me at 610-337-5337.

Regards,
Nancy

Siwy, Andrew

From: Sheehan, Neil
Sent: Wednesday, May 20, 2015 8:10 AM
To: Scott, Michael
Subject: Re: Wall Street Journal questions on Indian Point transformers

I think we're good at this point.

Neil Sheehan
NRC Public Affairs Officer
Sent from NRC Blackberry

From: Scott, Michael
Sent: Wednesday, May 20, 2015 07:58 AM
To: Sheehan, Neil
Subject: FW: Wall Street Journal questions on Indian Point transformers

Does all the e-mail traffic collectively get you what you needed on this?

From: Rogge, John
Sent: Wednesday, May 20, 2015 7:52 AM
To: Scott, Michael
Cc: Sheehan, Neil; Stewart, Scott; Orr, Dan; Dumont, Louis; Fuhrmeister, Roy; Galbreath, Stephanie; Rady, Jeff; Rogge, John; Young, Keith; Patel, Jigar (R1); Richmond, John
Subject: RE: Wall Street Journal questions on Indian Point transformers

EPRI industry guidance is 1002913 and it would be expected to be the bible of transformer maintenance. Published in 2002. Went public in 2006 as no longer proprietary.

I think Note that the standard for dissolved gasses in oil is a 6 to 1 year. IPEC had an installed continuous monitor which did not indicate a problem but would say they exceed the standard.

Gas monitoring is an indication of breakdown of insulation and materials which lead to failure.

So in general one would expect consistency in use of the EPRI guide but what each exactly they do is unknown compared to others. What is needed is the cause of failure to determine a path to why.

From: Scott, Michael
Sent: Tuesday, May 19, 2015 1:56 PM
To: Rogge, John
Cc: Sheehan, Neil
Subject: RE: Wall Street Journal questions on Indian Point transformers

John:

I think the question was scratching at what the general industry practice for transformer inspection is, and is Entergy generally in line with that. Do you have a feel for that?

Mike

From: Rogge, John

Sent: Tuesday, May 19, 2015 1:09 PM

To: Sheehan, Neil; Wentzel, Michael; Scott, Michael; Nieh, Ho; Burritt, Arthur; Setzer, Thomas; Lorson, Raymond; Pickett, Douglas; Patel, Jigar (R1); Gray, Mel; Stewart, Scott; Fuhrmeister, Roy

Cc: Orr, Dan; Dumont, Louis; Fuhrmeister, Roy; Galbreath, Stephanie; Rady, Jeff; Rogge, John; Young, Keith; Richmond, John

Subject: RE: Wall Street Journal questions on Indian Point transformers

Simple questions but answers are complicated. The IEEE has multiple standards for maintenance but there are too many to attach. Below is a list of items to check.

Simply, Transformers are usually covered in the Maintenance Rule, which is a high level program that depends on proper maintenance practices. See 2iii for non safety related ...whose failure could cause a reactor scram...

The maintenance rule requires monitoring and may be the reason they went from 4 to 2 years on preventive maintenance for effectiveness.. Maybe the Resident can fill in the why. What I think they are saying is that they look every outage as opposed to every other when the transformer is electrically accessible.

But maintenance of what, that is a very generic term as many things fall under this.. Clearly daily checks via visual observation by an operator, monthly or daily oil samples, busing double testing at 10 years intervals.

Advanced Engineering Qualification – Electrical
Individual Study Activity

Windings	DC Resistance
	Turns Ratio
	Percent Impedance/Leakage Reactance
	Sweep Frequency Response (SFRF)
	Doble Tests
	Capacitance
Core	Excitation Current/Watts Loss
	Power Factor/Dissipation Factor
	Insulation Resistance
Core	Ground Test
Tanks and Auxiliaries	Fault Pressure Relay (functional test)
	Pressure Relief Device (visual)
	Buchholz Relay (visual for gas)
	Top Oil Temperature Indicator
	Winding Temperature Indicator
	Infrared Temperature Scan
Cooling System	Fault Analyzer (ultrasonic test)
	Sound Analysis (sonic)
	Vibration Analyzer
	Cleaning (fan blades/radiators)
	Fans and Controls (fan)
Cooling System	Oil Pumps (pump rotation/flow)
	Pump Bearings (vibration, sound)
	Radiator (valve lineup)
	Infrared Temperature Scan
Bushings and Arresters	Capacitance (Doble test)
	Dielectric Loss (Watts)
	Power Factor
	Infrared Temperature Scan
Conservator	Oil Level (bushings only)
	Visual Inspection (cracks/chips)
	Visual Inspection (leaks, diaphragm)
	Inert Air System (desiccant color)
Insulating Oil	Level Gauge Calibration
	Dissolved Gas Analysis (DGA)
	Dielectric Strength
	Metal Particle Count
Insulating Oil	Figure 3 - TESTING
	Power Factor/Dissipation Factor (Doble)
	Interfacial Tension
	Acid Number
	Furans
	Oxygen Inhibitor

Figure 3 – Testing Summary

From: Sheehan, Neil
Sent: Tuesday, May 19, 2015 12:05 PM
To: Wentzel, Michael; Scott, Michael; Nieh, Ho; Burritt, Arthur; Setzer, Thomas; Lorson, Raymond; Pickett, Douglas; Rogge, John
Subject: RE: Wall Street Journal questions on Indian Point transformers

Good point, Mike

From: Wentzel, Michael
Sent: Tuesday, May 19, 2015 12:00 PM
To: Scott, Michael; Sheehan, Neil; Nieh, Ho; Burritt, Arthur; Setzer, Thomas; Lorson, Raymond; Pickett, Douglas; Rogge, John
Subject: RE: Wall Street Journal questions on Indian Point transformers

Neil,

About the first bullet, I also wanted to add that the staff's position on the NYS-8 (the transformers contention) is that, as active components, the Maintenance Rule, along with existing monitoring, surveillance, inspection and testing programs, serves the purpose for electrical transformers that an aging management program would serve for a passive component. This position was affirmed in the Commission's decision overturning the ASLBP's ruling.

Thanks,
Mike

From: Scott, Michael
Sent: Tuesday, May 19, 2015 11:50 AM
To: Sheehan, Neil; Nieh, Ho; Burritt, Arthur; Setzer, Thomas; Lorson, Raymond; Pickett, Douglas; Wentzel, Michael; Rogge, John
Subject: RE: Wall Street Journal questions on Indian Point transformers

I will reply on the first bullet. We should not speculate on the cause of the transformer failure, but rather we will inspect the issue and review the licensee's failure analysis. When we have sufficient information about the cause, we will reach conclusions about the adequacy of the licensee's maintenance of the equipment. Although this transformer is nonsafety, we are concerned about its reliability since, as was amply demonstrated, its failure can lead to a plant transient. Although it may not be scoped in aging management, the licensee is required to monitor the performance of components such as this one whose failure can cause a reactor scram.

Regarding the rest – John Rogge, can you please answer these?

Thanks

Mike

From: Sheehan, Neil
Sent: Tuesday, May 19, 2015 11:06 AM
To: Nieh, Ho; Scott, Michael; Burritt, Arthur; Setzer, Thomas; Lorson, Raymond; Pickett, Douglas; Wentzel, Michael
Subject: Wall Street Journal questions on Indian Point transformers

A reporter for the Wall Street Journal is working on a follow-up story for tomorrow on the Indian Point 3 transformer failure. He has posed several questions that I could use your help with. They are:

- The New York AG's Office filed a contention in the Indian Point license renewal hearing that involved the aging management of transformers. The contention was upheld by the ASLB but overturned by the Commission, which ruled that transformers are active components and therefore do not fall under aging management programs because they are not passive. The AG's Office is arguing that if the transformers were subjected to aging management, the recent transformer failure might not have occurred. Does the NRC consider this to be true? If not, why not?
- Entergy told the newspaper it inspects the transformers every two years (a change from four years that it apparently adopted after an earlier transformer failure). Is this interval common for nuclear power plants?
- What is the normal period of inspection for transformers for nuclear power plants?
- Are there any nuclear power plants that inspect transformers on a monthly interval?

The reporter is asking for responses this afternoon.

Klukan, Brett

From: Sheehan, Neil
Sent: Tuesday, May 19, 2015 12:17 PM
To: Dorman, Dan; Lew, David; Nieh, Ho; Scott, Michael; Lorson, Raymond; Trapp, James; Burritt, Arthur; Screnci, Diane; Klukan, Brett
Subject: FW: NRC Begins Special Inspection at Indian Point 3 Nuclear Power Plant to Review Issue Associated with Transformer Event on May 9th

FYI

From: Nappi, Jerry [<mailto:jnappi@entergy.com>]
Sent: Tuesday, May 19, 2015 12:13 PM
To: Sheehan, Neil; Kakridas, Patricia
Subject: RE: NRC Begins Special Inspection at Indian Point 3 Nuclear Power Plant to Review Issue Associated with Transformer Event on May 9th

Thanks. Please see Entergy statement.
-Jerry

Statement –

“The NRC has informed us they will send a special inspection team to Indian Point this week.

Following activation of the fire-fighting sprinkler system during the transformer fire, operators identified a small amount of water on a floor, and were prepared to take steps to mitigate it prior to the water quickly receding. As specified by the NRC, “none of the electrical equipment became wet or experienced any damage or failures as a result of the water” and all equipment operated as designed to safely shut down the plant.

By design, a small amount of water from the fire protection sprinkler system flows to a floor drain inside this building. Due to multiple sprinkler systems activating for this event, the water did not drain as quickly as expected. Entergy engineers continue investigating the issue in order to thoroughly understand the source of the water and will continue to work with the NRC to take any appropriate action.

Entergy has invested more than \$1 billion into equipment to strengthen and enhance safety over the last 10 years, and are committed to making any necessary enhancements to add additional layers of protection to an already safe plant.”

ART – ROP Inspection and Assessment

Good evening. I'd like to provide you with a summary of what the NRC has found through its inspection program at Indian Point. Overall, Entergy operated the Indian Point plants safely and within the conditions of their license.

Our 2014 assessment is based on about 8,200 hours of independent inspection of how Entergy operated and maintained Indian Point. The NRC has three onsite resident inspectors that looked at day-to-day control room operations, maintenance and testing of safety systems, They also performed spot checks in radiation protection, security and emergency preparedness. Our Specialist inspectors from the NRC Region 1 office also spent many weeks at the site conducting detailed reviews in areas such

as nondestructive examinations, emergency preparedness, radiation safety, fire protection, and plant modifications.

Although Entergy operated Indian Point safely, the NRC's inspectors did identify some deficiencies or findings in the areas of reactor safety, radiation safety, and security. We assessed these findings to be of very low safety significance—in other words, these finding did not have any significant effect on public health and safety—and Entergy took timely actions to fix these problems. Our assessment process also included reviewing performance indicator data that measure things like unplanned shutdowns. The data was verified to be accurate by our inspectors and in 2014, none of the performance indicators warranted additional NRC attention.

In 2014 Entergy also conducted an emergency exercise that was evaluated by the NRC and FEMA with no significant issue identified. This exercise was designed to practice the communication and coordination between the site staff and local, State and Federal law enforcement during a simulated security event. The NRC also practiced our event response roles including activating our incident response center and dispatching a site team.

So again in 2014 Indian Point was operated safely and continues to be operated safely.

Now I'd like to turn it over to Ho Nieh, who will discuss a few other areas regarding the safety of Indian Point.

Ho Nieh – Fukushima, Gas Pipeline, SIT

Thanks Art. Given the public interest in improving the capability of nuclear power plants to withstand the effects of severe natural events, I'd like to provide you with a summary of where Indian Point stands with implementing some of the new NRC requirements following the Fukushima event.

With respect to earthquakes and floods, Entergy walked-down the facility to ensure that its safety systems are sufficiently protected for the earthquakes and floods it was originally licensed to withstand. The NRC also did its own independent walk-downs to confirm this level of protection. As you may be aware, new information shows the potential for earthquakes or floods of greater magnitudes than what was estimated during original

licensing. Therefore, the NRC has required Entergy to assess the new information and implement modifications necessary to strengthen the protections for Indian Point. The facility is on schedule to meet NRC's requirements in this area.

To further enhance the ability of Indian Point to withstand a severe event, Entergy has also purchased and staged multiple means of providing portable electricity and cooling water supplies. This is the so-called FLEX equipment that is being implemented at all U.S. nuclear power plants. This equipment will be stored in a hardened bunker on site, with connections being made to use this equipment. If needed, FLEX equipment from other parts of the country can also be airlifted to the site.

The NRC is aware of the great interest in the proposed new gas pipeline to be located near the site. The NRC carefully reviewed Entergy's assessment of the potential hazard of this proposed pipeline, with focus on the safety features to protect against a pipe break. The NRC found that Entergy appropriately concluded that the proposed pipeline does not introduce significant additional risk to Indian Point.

Finally, I know many of you are aware of the recent failure of a transformer at Indian Point Unit 3. While the plant safely shutdown following the transformer failure and fire, the NRC is reviewing the matter further due to water found in an electrical switchgear room following the activation of the transformer sprinkler system. A Special Inspection Team is looking into how water entered the

room, the potential safety risk, and corrective actions to prevent this from happening again. The team will publish its findings this summer.

I'd now like turn the meeting back to Dan Dorman.

Fuhrmeister, Roy

From: Pickett, Douglas
Sent: Thursday, June 04, 2015 10:05 AM
To: Setzer, Thomas; Fuhrmeister, Roy
Cc: Dudek, Michael
Subject: Indian Point 3 SIT Status

Tom – thanks for the status

From: Setzer, Thomas
Sent: Thursday, June 04, 2015 10:03 AM
To: Pickett, Douglas; Fuhrmeister, Roy
Subject: RE: SIT Findings

We are onsite continuing the inspection. We will do a debrief today but still have work to do. We plan to exit next week. At this point, we are still trying to determine what, if any, findings there are.

From: Pickett, Douglas
Sent: Thursday, June 04, 2015 9:55 AM
To: Setzer, Thomas; Fuhrmeister, Roy
Subject: SIT Findings

Tom/Roy –

I was asked this morning about the status of the SIT. Didn't you exit recently?

Regardless, if you have a convenient email providing findings/status, could you forward that to me?

Thanks - Doug

Douglas V. Pickett, Senior Project Manager
Indian Point Nuclear Generating Unit Nos. 2 & 3
James A FitzPatrick Nuclear Power Plant
Douglas.Pickett@nrc.gov
301-415-1364

h-b-d

McKenzie, Kieta

From: Dorman, Dan
Sent: Wednesday, May 20, 2015 4:53 PM
To: Nieh, Ho; Screnci, Diane
Subject: Fw: Comments on blog post re: Indian Point 3 Special Inspection

From: Sheehan, Neil
Sent: Wednesday, May 20, 2015 03:18 PM
To: Dorman, Dan; Burritt, Arthur; Setzer, Thomas
Subject: Comments on blog post re: Indian Point 3 Special Inspection

FYI; These comments/questions were posted on my blog post about the start of the Indian Point 3 Special Inspection:

NukePuke [May 20, 2015 at 12:09 pm](#)

Excellent comments by my blogging partners!

Thought I would share this little note that I sent to the NY Governor...

Subject: "Dangerous Near Miss at Indian Point Nuclear Power Plant Unit #3" or "How We Almost Lost NYC"

Dear Honorable Governor Andrew M. Cuomo:

Included below is a recent blog update by the NRC of an incident at Indian Point Unit #3 located near New York City. (Not included in this blog for an obvious reason).

At a nuclear plant, either too much water or too little water can be dangerous.

A recent water intrusion event at Indian Point nearly caused a loss of vital electrical equipment required to safely cool nuclear fuel at the site. What the NRC Blog does not include is just how close water got to this vital equipment. A reliable source of mine stated that water came within inches of this equipment. Specifically I was told that the water level rose to within two inches of this vital electrical switchgear. The NRC does acknowledge the water intrusion event but indicated only that there was "an inch or two of water on the electrical equipment room floor".

As we are all well aware, the loss of power to vital reactor cooling equipment can soon lead to the a disaster like Fukushima.

The NRC has arranged for a special investigation of this incident. I hope all the really hard questions are asked by this team. For example...

- Why were the flood protection barriers to this vital room inadequate?
- There have been a number of flood barrier deficiencies found at US nuclear power plants over the years. Fort Calhoun Nuclear Station and ANO have found numerous deficiencies in flood protection barriers at their facilities. The NRC has issued NRC Information Notices to all plants regarding these potentially generic problems. What measures did Entergy take to ensure these vulnerabilities did not pose a safety threat at Indian Point?
- Considering how close IP3 appears to have come to a catastrophic accident, why is the NRC not requiring an Augmented Inspection Team (AIT) or even an Incident Inspection Team (IIT) be sent to the site instead of its lowest level of investigative response, a Special Investigation (SI)?

- Although IP3 will be out of service for some time due to the loss of its main transformer by fire during this event, why hasn't the NRC ordered the plant to remain shut down in cold condition until not only the NRC investigation is completed but until all necessary corrective measures have been taken?
- Why hasn't IP2 been shut down until it can be checked for similar vulnerabilities?

Lew, David

From: Setzer, Thomas
Sent: Wednesday, May 20, 2015 4:51 PM
To: Nieh, Ho; Scott, Michael; Lorson, Raymond; Trapp, James; Dorman, Dan; Lew, David; Screnci, Diane; Sheehan, Neil; Tift, Doug; McNamara, Nancy; Pickett, Douglas; Stewart, Scott; Newman, Garrett; Rich, Sarah; Bolger, Allyce; Fuhrmeister, Roy; Burritt, Arthur; Schmidt, Wayne; Cahill, Christopher; Mangan, Kevin; Arner, Frank; Schussler, Jason; Dodson, Douglas; Schoppy, Joseph
Subject: Indian Point SIT Day 2

Good afternoon-

Again, feel free to pass on.

We are continuing our review of their hydraulic analysis of flow through the storm drains and have a concern with the model. Entergy has performed some storm drain inspections (21" line) and found localized damage where silt and sand deposited into the piping and built up to approximately 30% of the pipe. We have a couple concerns with this discovery. The hydraulic analysis does not appear to assume any restrictions in the flow out of the storm drains. Restrictions would cause a higher hydraulic grade of water leading back to the switchgear room. Additionally, we are concerned with the extent of condition with the storm drain piping all the way to the discharge canal. It is not clear whether Entergy is planning to inspect the rest of the piping, and we are waiting for an answer.

Entergy is troubleshooting the operation of the solenoid valve that opens to port water to the floor drain in the deluge valve room. It is still unknown whether or not this solenoid should close after the deluge system activates. We should get results tomorrow on the proper operation of this valve, and what may have gone wrong, if anything, during the event.

Regarding the restrictions found in the floor drains within the switchgear room, Entergy has a PM where they dump 10 gallons of water down the floor drains to see if it will drain within a minute. This appears to be inadequate to detect blockages in the drain system due to its size (there is more than 10 gallons of volume in piping underground) and potential location of a blockage. This inadequacy would apply to Unit 2 as well, as the PMs have been explained as being the same on both units.

Im off to the annual assessment meeting...Have a great night!
TOM

From: Setzer, Thomas
Sent: Tuesday, May 19, 2015 4:48 PM
To: Nieh, Ho; Scott, Michael; Lorson, Raymond; Trapp, James; Dorman, Dan; Lew, David; Screnci, Diane; Sheehan, Neil; Tift, Doug; McNamara, Nancy; Pickett, Douglas; Stewart, Scott; Newman, Garrett; Rich, Sarah; Bolger, Allyce; Fuhrmeister, Roy; Burritt, Arthur; Schmidt, Wayne; Cahill, Christopher; Mangan, Kevin; Arner, Frank; Schussler, Jason; Dodson, Douglas
Subject: Indian Point SIT Day 1 - AIT not recommended

Good afternoon-

Please feel free to forward this on to anyone I missed and would be interested.

The team (Sarah Rich, Roy Fuhrmeister and I) arrived safely and completed an entrance at 11am today. At 12:30, Entergy's SIT inspection support team made a presentation on the water accumulation in the switchgear

room. Entergy performed their own in-house hydraulics analysis and hired an outside engineering firm (LPI, Inc) to model the drainage flows in the transformer yard and the switchgear room. The analyses conclude that the water in the switchgear room came from the deluge system room next to the switchgear room, and not from the transformer yard. This is supported by the following:

1. Entergy assumed all of the deluge water (4300 gpm) would flow into the storm drains. At this rate, and considering the drainage flow out to the discharge canal, the highest height the water would back up inside the storm drains (manhole B3) is 10.4'. The switchgear room is at 15.0', so it could not reach the room.
2. A flowrate of 6200 gpm would be needed in order for water to back up from the transformer yard to the switchgear room. This would exceed the capacity of the deluge system. Additionally, 6200 gpm exceeds the actual maximum flow through the manhole cover based on its geometry (2300 gpm max).
3. Entergy boroscoped the drain piping in the switchgear room and found debris that significantly reduces the drainage capability (Potential PD #1). They postulate that the water from the deluge system backed up due to this restriction and made its way out a path of least resistance (a hub drain in the switchgear room).
4. The report that water had backed up through a turbine building drain is incorrect. The water that was found near the 6.9kV transformer came through an external wall that is known to have water seepage issues.

One other presentation they made was concerning the operation of the deluge valves and this solenoid valve that ports water to the floor drain. They are currently investigating the design and proper operation of this valve. The drawings seem to indicate that the valve is supposed to automatically close and stop porting water to the drain once the fire protection system reaches 6 psig (Potential PD #2).

They have concluded that a maximum height of water in the switchgear room before adverse conditions occur is 4.875 inches. This is based on Westinghouse drawings and visual inspections. They have not verified these by physical measurements because of the industrial safety concern. We have questions concerning this height.

We are beginning to look into the calculations that support these conclusions. So far, the analysis seems reasonable and we feel we have the adequate skill set available on the team to verify. We also don't see any non-conservative differences in the assumptions that were made in our initial risk analysis. Therefore, we would not recommend upgrading to an AIT.

We are getting good support from the licensee. They have a team of ~dozen people dedicated to getting us what we need. More to follow tomorrow.

VR
TOM

Tifft, Doug

From: McNamara, Nancy
Sent: Thursday, May 21, 2015 8:53 AM
To: 'Alyse L. Peterson'
Cc: Tifft, Doug
Subject: RE: IP SIT Phone Exit

Only you and Cini. The call is part of the inspection, so it's bound by the inspection protocol. Please do not share the call-in information outside of yourselves, thanks.

From: Alyse L. Peterson [<mailto:Alyse.Peterson@nyserda.ny.gov>]
Sent: Thursday, May 21, 2015 8:49 AM
To: McNamara, Nancy
Cc: Tifft, D
Subject: RE: IP SIT Phone Exit

Sounds good.

Since I know I will be asked this question: may others listen in or is it restricted to 2 people and, if restricted, do those 2 people have to be me and Cini?

From: McNamara, Nancy [<mailto:Nancy.McNamara@nrc.gov>]
Sent: Thursday, May 21, 2015 8:46 AM
To: Alyse L. Peterson
Cc: Tifft, Doug
Subject: IP SIT Phone Exit

Hi Alyse. It was fun hanging out with Cini last night. The IP SIT will be debriefing the licensee tomorrow before leaving the site; however, will not be exiting. The exit will be a phone exit in the next week or two. When that occurs, I will send you and Cini the call information so you may listen in.

Email secured by Check Point

2-11-16

Lew, David

From: Scott, Michael
Sent: Friday, May 22, 2015 7:13 AM
To: Setzer, Thomas; Nieh, Ho; Lorson, Raymond; Trapp, James; Dorman, Dan; Lew, David; Screnci, Diane; Sheehan, Neil; Tift, Doug; McNamara, Nancy; Pickett, Douglas; Stewart, Scott; Newman, Garrett; Rich, Sarah; Bolger, Allyce; Fuhrmeister, Roy; Burritt, Arthur; Schmidt, Wayne; Cahill, Christopher; Mangan, Kevin; Arner, Frank; Schussler, Jason; Dodson, Douglas; Schoppy, Joseph; Pinson, Brandon
Subject: RE: Indian Point SIT Day 3

Tom, Sarah, and Roy:

Thanks for sorting this out for us. We appreciate your stepping forward and doing a superlative job on the inspection.

Hope you all have a great weekend!

Mike

From: Setzer, Thomas
Sent: Thursday, May 21, 2015 4:04 PM
To: Nieh, Ho; Scott, Michael; Lorson, Raymond; Trapp, James; Dorman, Dan; Lew, David; Screnci, Diane; Sheehan, Neil; Tift, Doug; McNamara, Nancy; Pickett, Douglas; Stewart, Scott; Newman, Garrett; Rich, Sarah; Bolger, Allyce; Fuhrmeister, Roy; Burritt, Arthur; Schmidt, Wayne; Cahill, Christopher; Mangan, Kevin; Arner, Frank; Schussler, Jason; Dodson, Douglas; Schoppy, Joseph; Pinson, Brandon
Subject: Indian Point SIT Day 3

We are in a position to only debrief tomorrow, not exit. We have three concerns. Two of the concerns (#2 and #3) have been addressed through a T-MOD that diverts water from the switchgear room to the diesel room, which has a huge sump and gravity drain. The first concern is one where we feel a comp action may be needed.

Concerns:

1. The damage found in the 21" storm drain pipe - we need to know the condition of the remainder of storm drain piping all the way to the discharge canal before we would be able to accept their hydraulic modeling. Obviously, further restrictions or blockages in this line would cause water to backup towards the switchgear room. We also cannot discount the possibility of a total failure of this line given the damage, and if rain were to come there would be significant input into this storm drain upstream due to roof downspouts that empty into the transformer yard. There are no level detectors or alarms in the switchgear room that would alert them of any water should it come from rain. So, a comp measure may be necessary until they ensure the storm drain piping is clear to the discharge canal. We would need to know the condition of the storm drain system piping before we could agree with the modeling.
2. They are still troubleshooting the proper operation of the deluge system solenoid valve that ported water into the floor drain and wound up in the switchgear room. Depending on the results, there may be a PD to document here. Too soon to tell. We should have that next week.
3. The floor drain piping in the switchgear room is significantly restricted. A PM they perform every two years where they pour 10 gallons of water into the drain is inadequate to detect restrictions or blockages. There is likely a PD here for not ensuring the drains were clear according to their

B-34

procedure. We want confirmation that these lines have been cleaned and are clear before we do an exit.

We will debrief tomorrow at 10am and I will be back in the region next Tuesday.

Have a great weekend
TOM

From: Setzer, Thomas

Sent: Wednesday, May 20, 2015 4:51 PM

To: Nieh, Ho; Scott, Michael; Lorson, Raymond; Trapp, James; Dorman, Dan; Lew, David; Screnci, Diane; Sheehan, Neil; Tiff, Doug; McNamara, Nancy; Pickett, Douglas; Stewart, Scott; Newman, Garrett; Rich, Sarah; Bolger, Allyce; Fuhrmeister, Roy; Burritt, Arthur; Schmidt, Wayne; Cahill, Christopher; Mangan, Kevin; Arner, Frank; Schussler, Jason; Dodson, Douglas; Schoppy, Joseph

Subject: Indian Point SIT Day 2

Good afternoon-

Again, feel free to pass on.

We are continuing our review of their hydraulic analysis of flow through the storm drains and have a concern with the model. Entergy has performed some storm drain inspections (21" line) and found localized damage where silt and sand deposited into the piping and built up to approximately 30% of the pipe. We have a couple concerns with this discovery. The hydraulic analysis does not appear to assume any restrictions in the flow out of the storm drains. Restrictions would cause a higher hydraulic grade of water leading back to the switchgear room. Additionally, we are concerned with the extent of condition with the storm drain piping all the way to the discharge canal. It is not clear whether Entergy is planning to inspect the rest of the piping, and we are waiting for an answer.

Entergy is troubleshooting the operation of the solenoid valve that opens to port water to the floor drain in the deluge valve room. It is still unknown whether or not this solenoid should close after the deluge system activates. We should get results tomorrow on the proper operation of this valve, and what may have gone wrong, if anything, during the event.

Regarding the restrictions found in the floor drains within the switchgear room, Entergy has a PM where they dump 10 gallons of water down the floor drains to see if it will drain within a minute. This appears to be inadequate to detect blockages in the drain system due to its size (there is more than 10 gallons of volume in piping underground) and potential location of a blockage. This inadequacy would apply to Unit 2 as well, as the PMs have been explained as being the same on both units.

Im off to the annual assessment meeting... Have a great night!
TOM

From: Setzer, Thomas

Sent: Tuesday, May 19, 2015 4:48 PM

To: Nieh, Ho; Scott, Michael; Lorson, Raymond; Trapp, James; Dorman, Dan; Lew, David; Screnci, Diane; Sheehan, Neil; Tiff, Doug; McNamara, Nancy; Pickett, Douglas; Stewart, Scott; Newman, Garrett; Rich, Sarah; Bolger, Allyce; Fuhrmeister, Roy; Burritt, Arthur; Schmidt, Wayne; Cahill, Christopher; Mangan, Kevin; Arner, Frank; Schussler, Jason; Dodson, Douglas

Subject: Indian Point SIT Day 1 - AIT not recommended

Good afternoon-

Please feel free to forward this on to anyone I missed and would be interested.

The team (Sarah Rich, Roy Fuhrmeister and I) arrived safely and completed an entrance at 11am today. At 12:30, Entergy's SIT inspection support team made a presentation on the water accumulation in the switchgear room. Entergy performed their own in-house hydraulics analysis and hired an outside engineering firm (LPI, Inc) to model the drainage flows in the transformer yard and the switchgear room. The analyses conclude that the water in the switchgear room came from the deluge system room next to the switchgear room, and not from the transformer yard. This is supported by the following:

1. Entergy assumed all of the deluge water (4300 gpm) would flow into the storm drains. At this rate, and considering the drainage flow out to the discharge canal, the highest height the water would back up inside the storm drains (manhole B3) is 10.4'. The switchgear room is at 15.0', so it could not reach the room.
2. A flowrate of 6200 gpm would be needed in order for water to back up from the transformer yard to the switchgear room. This would exceed the capacity of the deluge system. Additionally, 6200 gpm exceeds the actual maximum flow through the manhole cover based on its geometry (2300 gpm max).
3. Entergy boroscoped the drain piping in the switchgear room and found debris that significantly reduces the drainage capability (Potential PD #1). They postulate that the water from the deluge system backed up due to this restriction and made its way out a path of least resistance (a hub drain in the switchgear room).
4. The report that water had backed up through a turbine building drain is incorrect. The water that was found near the 6.9kV transformer came through an external wall that is known to have water seepage issues.

One other presentation they made was concerning the operation of the deluge valves and this solenoid valve that ports water to the floor drain. They are currently investigating the design and proper operation of this valve. The drawings seem to indicate that the valve is supposed to automatically close and stop porting water to the drain once the fire protection system reaches 6 psig (Potential PD #2).

They have concluded that a maximum height of water in the switchgear room before adverse conditions occur is 4.875 inches. This is based on Westinghouse drawings and visual inspections. They have not verified these by physical measurements because of the industrial safety concern. We have questions concerning this height.

We are beginning to look into the calculations that support these conclusions. So far, the analysis seems reasonable and we feel we have the adequate skill set available on the team to verify. We also don't see any non-conservative differences in the assumptions that were made in our initial risk analysis. Therefore, we would not recommend upgrading to an AIT.

We are getting good support from the licensee. They have a team of ~dozen people dedicated to getting us what we need. More to follow tomorrow.

VR
TOM

DL:

0, 20, 0 20

ORA

1	0	1	0
20		20	
15		15	
30		05	

<u>2</u>	<u>05</u>	<u>1</u>	<u>40</u>
----------	-----------	----------	-----------

Siwy, Andrew

From: Burritt, Arthur
Sent: Friday, May 22, 2015 2:45 PM
To: Lorson, Raymond
Subject: Re: Indian Point SIT Debrief - Update

Yes

From: Lorson, Raymond
Sent: Friday, May 22, 2015 01:13 PM
To: Burritt, Arthur
Subject: RE: Indian Point SIT Debrief - Update

Thanks Art – so I suppose it is fair to say that we are confident in the licensee’s ability to fix the drains in the next couple of days and have adequate inspection coverage?

Ray

From: Burritt, Arthur
Sent: Friday, May 22, 2015 12:30 PM
To: Lorson, Raymond; Scott, Michael
Cc: Trapp, James; Nieh, Ho; Setzer, Thomas; Stewart, Scott; Bolger, Allyce; Newman, Garrett; Pinson, Brandon
Subject: Indian Point SIT Debrief - Update

During the debrief we were told the following items would be completed prior to startup:

- The floor drains in the Control Building would be cleared of any blockage (requires Coast Guard coordination/approval);
- The storm drain system that connects to the Control Building would be inspected to verify a clear path to the discharge canal (requires Coast Guard coordination/approval);
- The storm drains system that connects to the Diesel room (alternate drain path used as a comp measure) would be inspected to verify a clear path to the discharge canal.

Entergy also plans to repair the damaged section of pipe in the storm drains that connect to the pipe after fully assessing the condition of that storm drain system and planning an appropriate repair plan. They assured us that their staff is frequently in the room and would identify any drain backups. Based on feedback from the SIT, Entergy is evaluating a more formal compensatory measure to detect storm drain failures/blockage that could back water up into the Control Building.

Based on the above, the Branch does not have any safety or plant restart concerns. Entergy is schedule to startup Unit 3 on Sunday afternoon and the residents will observe key points in the startup.

bbs

Siwy, Andrew

From: Scott, Michael
Sent: Saturday, May 23, 2015 3:15 PM
To: Burritt, Arthur
Subject: Re: Indian Point SIT Debrief - Update

Thx. I got feedback from Tom regarding the nexus between the sit and the restart questions. I did not intend such nexus; guess my message not clear yesterday.

On: 23 May 2015 09:53, "Burritt, Arthur" <Arthur.Burritt@nrc.gov> wrote:
Entergy had high confidence that they would get the approvals to flush the drains. I will have the RI check later today. More to follow.

From: Burritt, Arthur
Sent: Friday, May 22, 2015 12:29 PM
To: Lorson, Raymond; Scott, Michael
Cc: Trapp, James; Nieh, Ho; Setzer, Thomas; Stewart, Scott; Bolger, Allyce; Newman, Garrett; Pinson, Brandon
Subject: Indian Point SIT Debrief - Update

During the debrief we were told the following items would be completed prior to startup:

- The floor drains in the Control Building would be cleared of any blockage (requires Coast Guard coordination/approval);
- The storm drain system that connects to the Control Building would be inspected to verify a clear path to the discharge canal (requires Coast Guard coordination/approval);
- The storm drains system that connects to the Diesel room (alternate drain path used as a comp measure) would be inspected to verify a clear path to the discharge canal.

Entergy also plans to repair the damaged section of pipe in the storm drains that connect to the pipe after fully assessing the condition of that storm drain system and planning an appropriate repair plan. They assured us that their staff is frequently in the room and would identify any drain backups. Based on feedback from the SIT, Entergy is evaluating a more formal compensatory measure to detect storm drain failures/blockage that could back water up into the Control Building.

Based on the above, the Branch does not have any safety or plant restart concerns. Entergy is schedule to startup Unit 3 on Sunday afternoon and the residents will observe key points in the startup.

Handwritten signature/initials

Siwy, Andrew

From: Setzer, Thomas
Sent: Thursday, May 28, 2015 11:22 AM
To: Rich, Sarah
Subject: RE: potential trip back to IP

I think you have like a 4 hour drive down to IP. We may be able to swing a late Tuesday meeting with them and get you back by end of Wednesday. I guess that boils down to you missing Tuesday and Wednesday. They still have to get back to me on when they will be ready anyway.

From: Rich, Sarah
Sent: Thursday, May 28, 2015 10:11 AM
To: Setzer, Thomas; Fuhrmeister, Roy
Cc: Schmidt, Wayne
Subject: RE: potential trip back to IP

Tom,
VY is doing some surveillances and maintenance next week that I'd like to be here for, but if I am really needed back at IP I could probably do it.
Sarah

From: Setzer, Thomas
Sent: Thursday, May 28, 2015 10:08 AM
To: Rich, Sarah; Fuhrmeister, Roy
Cc: Schmidt, Wayne
Subject: potential trip back to IP

Sarah and Roy-
Would either of you be available for a trip back to IP next week for a day or two?

The licensee would like to give us a presentation next week. I discussed this with Art and he thinks an in-person meeting and some more onsite time would be the best way to wrap this up, as opposed to doing it on the phone.

Also, Wayne Schmidt is beginning to plan a trip up there next week too.

Please share your thoughts about another trip up.

Thanks
TOM



Siwy, Andrew

From: Stewart, Scott
Sent: Thursday, May 28, 2015 11:48 AM
To: Rihm, Roger
Subject: RE: ACTION: Review Draft Response to Rep. Lowey

The responding fire departments were Montrose and "Verplank". Please assure Verplank spelling. Scott

From: Burritt, Arthur
Sent: Thursday, May 28, 2015 11:27 AM
To: Rihm, Roger
Cc: Stewart, Scott; Setzer, Thomas
Subject: RE: ACTION: Review Draft Response to Rep. Lowey

See the attached suggested changes.

From: Rihm, Roger
Sent: Tuesday, May 26, 2015 2:42 PM
To: Burritt, Arthur
Subject: ACTION: Review Draft Response to Rep. Lowey

I'd appreciate any comments/corrections/concerns before I share with OGC and OCA. Redline/strikeout preferred. By Weds/Thurs. would be great.

b-bj

Siwy, Andrew

From: Stewart, Scott
Sent: Friday, May 29, 2015 8:09 AM
To: Newman, Garrett; Bolger, Allyce; Rich, Sarah
Subject: FW: ACTION: Review Response to Rep. Lowey
Attachments: Lowey_May 2015_transformer fire.docx

Importance: High

Something I had been working on, FYI, Scott

From: Burritt, Arthur
Sent: Thursday, May 28, 2015 2:40 PM
To: Nieh, Ho; Stewart, Scott
Subject: FW: ACTION: Review Response to Rep. Lowey
Importance: High

I just concurred on the attached

From: Rihm, Roger
Sent: Thursday, May 28, 2015 1:38 PM
To: Weil, Jenny; Turk, Sherwin; Burritt, Arthur
Subject: ACTION: Review Response to Rep. Lowey
Importance: High

Please review/comment/concur by COB June 1, if possible. Art, I incorporated most of your comments, but still need an email from you with your OK (and any last comments you might have).

Thank you!

Roger S. Rihm
Communications and Performance Management Staff
Office of the Executive Director for Operations
US NRC
301.415.1717
roger.rihm@nrc.gov

Setzer, Thomas

From: Setzer, Thomas
Sent: Friday, May 29, 2015 9:32 AM
To: Rich, Sarah; Fuhrmeister, Roy; Schmidt, Wayne; Burritt, Arthur
Subject: RE: Trip to IP

Ok guys. Looks like everyone can support travel to IP morning of Wednesday June 3, next week. Entergy will be ready by 1pm to present. We can spend the afternoon of Wed reviewing the items and then do another debrief (or exit) midday thursday. Thanks!!

----- Original Message -----

From: "Rich, Sarah" <Sarah.Rich@nrc.gov>
Date: Fri, May 29, 2015 9:21 AM -0400
To: "Setzer, Thomas" <Thomas.Setzer@nrc.gov>
Subject: RE: Trip to IP

Tom,
I should get there around 10:30 AM, based on how long it took me last time.
Sarah

From: Setzer, Thomas
Sent: Thursday, May 28, 2015 3:50 PM
To: Rich, Sarah; Fuhrmeister, Roy
Cc: Schmidt, Wayne
Subject: Trip to IP

Hi guys –

IPEC said they would be ready for a presentation on our items on Wednesday June 3. I plan on going up in person and would like you guys to join. Please let me know if you can support travel to the site for Wednesday June 3 and what time you could arrive. I will arrange a time that meets the travel. I think we would spend the night and wrap up on Thursday midday.

TOM

b24/0

Setzer, Thomas

From: Setzer, Thomas
Sent: Sunday, May 31, 2015 11:47 AM
To: Fuhrmeister, Roy; Schmidt, Wayne; Rich, Sarah
Subject: RE: Trip to IP

Hi Roy...sorry i left out the detail that I asked Anne to cancel the KT. We will work on a diff date.

----- Original Message -----

From: "Fuhrmeister, Roy" <Roy.Fuhrmeister@nrc.gov>
Date: Fri, May 29, 2015 3:09 PM -0400
To: "Setzer, Thomas" <Thomas.Setzer@nrc.gov>, "Schmidt, Wayne" <Wayne.Schmidt@nrc.gov>, "Rich, Sarah" <Sarah.Rich@nrc.gov>
Subject: RE: Trip to IP

Tom,

If we are going to be driving back from Indian point next Thursday afternoon, how is that going to affect Knowledge Transfer?

I'll be at Nine Mile Point the following week (June 9, 10, 11) starting the Fire Protection Triennial.

Roy L. Fuhrmeister

Siwy, Andrew

From: Scott, Michael
Sent: Monday, June 01, 2015 4:49 PM
To: Nieh, Ho
Subject: Prebrief for RA/DRA on IP SIT

Dave Lew requested that, prior to exiting the subject inspection, we brief Dan and him on the team's findings. Art is already planning this. FYI.

b-h/m

Siwy, Andrew

From: Setzer, Thomas
Sent: Tuesday, June 02, 2015 3:52 PM
To: Newman, Garrett; Burritt, Arthur
Cc: Schussler, Jason; Pinson, Brandon; Bolger, Allyce; Stewart, Scott; Pickett, Douglas; Rich, Sarah
Subject: RE: Indian Point Stakeholder Meeting

What details did Fred give on the Unit 1 oil tanks? Did they recently inspect them for any flammables?

From: Newman, Garrett
Sent: Tuesday, June 02, 2015 3:42 PM
To: Burritt, Arthur; Setzer, Thomas
Cc: Schussler, Jason; Pinson, Brandon; Bolger, Allyce; Stewart, Scott; Pickett, Douglas; Rich, Sarah
Subject: Indian Point Stakeholder Meeting

I attended Entergy's semiannual stakeholder meeting this morning. Topics covered and items of interest:

- Operational summary – Larry Coyle
- 31 main transformer failure – Larry Coyle
 - 1000–3000 gallons of dielectric fluid reached river based on NOAA and Coast Guard estimates; still investigating unaccounted volume.
 - Preliminarily the failure appears to be an internal fault on the “A” phase. Pieces will be sent off for failure analysis. Previous two failures were external bushing failures.
 - New transformer was procured from Siemens in 2011 (most recently failed was from SMIT in 1989).
- Oil quantification and mitigation – Don Mayer
 - EPA taking over oversight from Coast Guard, working with NY DEC.
 - Coast Guard designated Entergy as the source of the spill [under the Oil Pollution Act]. As such, Entergy must post advertisements allowing affected parties to submit claims for damages.
- Groundwater updates – Don Mayer
 - Entergy will make decision whether to pump out contamination by October 2015.
 - **The EPA was interested in whether the NRC had concurred with Entergy's cause of the tritium source. Don informed him that the NRC conducted an inspection and the report would be publicly available within 45 days. I don't think we owe the EPA any additional follow-up.**
- License Renewal – Fred Dacimo
 - U.S. Clean Water Act Water Quality Certification – hearings later this year
 - U.S. Coastal Zone Management Act Consistency Certificate – NY appeal in progress
- Spectra Gas Pipeline – Fred Dacimo
 - Many questions similar to what we've been hearing the public.
 - Fred addressed “allegations” about the consultant's qualifications and the status of the Unit 1 oil tanks.

Siwy, Andrew

From: Setzer, Thomas
Sent: Tuesday, June 02, 2015 12:04 PM
To: Tifft, Doug; Burritt, Arthur; Pickett, Douglas
Cc: McNamara, Nancy
Subject: RE: feedback on yesterdays meeting

Hi Doug – regarding the call for offsite fire assistance – their procedures require them to call for that assistance when there is a transformer fire. That is not indicative of their ability to fight the fire. They call for help no matter what. I would say we “expect” them to do that, but rather they are required to do so by their own procedure.

From: Tifft, Doug
Sent: Tuesday, June 02, 2015 11:54 AM
To: Setzer, Thomas; Burritt, Arthur; Pickett, Douglas
Cc: McNamara, Nancy
Subject: FW: feedback on yesterdays meeting

See below questions from Assemblywoman Galef’s Office.

Here is a draft response I wrote up as a starting point: What do you think?

You are correct that this is not the first time a transformer fire has led to an oil spill. We do not maintain detailed records of where the oil goes for each transformer fire. The NRC is responsible for nuclear safety of the plant and we do not have jurisdiction over oil spills to the environment. I did find this Information Notice from 2009 that discusses transformer fires:
<http://pbadupws.nrc.gov/docs/ML0905/ML090540218.pdf>

The purpose of the moat is to mitigate a spill of oil to the river. Since this is outside of the NRC’s authority, we do not have any capacity requirements for the moat, or even require a moat at all. I believe this may fall under EPA or NY DEC’s jurisdictions.

Regarding the specific response to the fire, Entergy did call for assistance of offsite fire departments. We consider this a prudent measure and expect them to request offsite assistance in situations like this. Although, we expect the licensee to be able to handle most fires with their onsite fire brigade, we also want them to use all available resources during a real event.

If there was a pipeline explosion, we would expect Entergy to notify offsite emergency response personnel. But we have determined that a pipeline explosion would not affect Indian Point’s ability to maintain safe shutdown.

From: Dana Levenberg [mailto:levenbergd@assembly.state.ny.us]
Sent: Monday, May 18, 2015 12:33 PM
To: Tifft, Doug
Subject: RE: feedback on yesterdays meeting

Hi Doug-

This is combined feedback from the Galef Assembly office—see below. Also, a follow up question that the Assemblywoman asked today following a conference call with IPEC about the recent transformer fire: It seems like this is

not the first time a transformer fire has led to an oil spill. Can you share statistics with us about other facilities and what happens when there is a transformer fire? Why is a moat that is built to contain oil from such a spill not built to contain the water and foam used to put out the fire? Let me know if you can help us out with this.

Also, the fire and the resultant spill is a perfect example of how statistical models do not seem to take everything into account. The NRC has been asked to evaluate what would happen in the event of a gas line explosion and said, essentially, that IPEC would not require outside assistance to make the plant safe. However, here, even with a transformer fire, a seemingly smaller and more containable event, IPEC called in two outside FDs. Can you explain why that wouldn't be the case with a pipeline explosion?

Thanks for your help.

Best,
Dana Levenberg
Chief of Staff
Office of Assemblywoman Sandy Galef
2 Church Street
Ossining, NY 10562
levenbergd@assembly.state.ny.us
(914) 941-1111 (p)
(914) 941-9132 (f)

From: Tift, Doug [<mailto:Doug.Tift@nrc.gov>]
Sent: Friday, May 01, 2015 1:15 PM
To: Tift, Doug
Subject: feedback on yesterdays meeting

Thank you for attending yesterday's Indian Pont government to government meeting. We appreciated the open dialogue and good exchange of information. But I would greatly appreciate hearing your feedback to see if the meeting met your needs and if there is anything we can do better in the future. Please fill out the following survey and reply back to me. I have also attached a copy of the sign in sheet from the meeting since I received several requests for it after the meeting.

- 1) Did you like the agenda topics? Yes.
 - a. What did you think was the most useful presentation? FERC/USDOT + Fukushima follow up
 - b. What did you think was the least useful presentation? ---
- 2) Was the meeting too long / too short? We asked a lot of questions, so it may have been too short to get to answering all of them as well as complete the agenda. Some of the information was curtailed.
- 3) Did you like the meeting location? Would prefer closer to IPEC because it is closer to us.
- 4) Did we satisfactorily address your questions? We are still hopeful for follow up and an independent assessment of the AIM siting. There are a lot of unanswered questions about the "why" for that decision. Even though there were many explanations, there are more questions.
- 5) Additional comments or suggestions for improvements: It would be helpful to have a similar conversation about the AIM siting with a bigger group.

Thank you,
-Doug

Setzer, Thomas

From: Setzer, Thomas
Sent: Monday, June 08, 2015 2:15 PM
To: Rich, Sarah; Fuhrmeister, Roy; Schmidt, Wayne
Cc: Burritt, Arthur
Subject: licensee update - additional testing

I spoke to Rich Louie today. They created work orders for the additional testing of the SOVs and determined there would be a potential reactor trip risk in lifting leads/jumpers, so they are going to hold a meeting tomorrow to determine a path forward. I will update you guys when I hear more from them on the testing.

TOM

B-4/5

Siwy, Andrew

From: Setzer, Thomas
Sent: Monday, June 08, 2015 8:50 PM
To: Burritt, Arthur
Subject: Switchgear room

I spoke to Scott. He doesnt know of any bus bars or critical equipment that resides below 4.875 inch.

B. H. B.

Siwy, Andrew

From: Rich, Sarah
Sent: Monday, June 08, 2015 8:41 AM
To: Setzer, Thomas
Subject: RE: exit meeting - phone bridge, input please

Tom,
I can call in.
Sarah

From: Setzer, Thomas
Sent: Monday, June 08, 2015 8:39 AM
To: Rich, Sarah; Fuhrmeister, Roy; Schmidt, Wayne
Subject: exit meeting - phone bridge, input please

I would like to do an exit meeting this Thursday at 1pm. Good time? Could you guys call in?

B-417

Siwy, Andrew

From: Burritt, Arthur
Sent: Tuesday, June 09, 2015 1:23 PM
To: Nieh, Ho; Scott, Michael
Subject: FW: Letter to Chairman Burns re review of Indian Point transformer fire
Attachments: 06 08 15 Sen. Gillibrand letter to NRC Chairman Burns re review of Indian Point transformer fire.pdf

FYI

From: Rihm, Roger
Sent: Tuesday, June 09, 2015 8:19 AM
To: Burritt, Arthur; Pickett, Douglas
Cc: McNamara, Nancy; Tiff, Doug
Subject: FW: Letter to Chairman Burns re review of Indian Point transformer fire

FYI, this letter hasn't yet been ticketed. I'll be in touch to discuss.

From: Weil, Jenny
Sent: Monday, June 08, 2015 8:11 PM
To: Rihm, Roger
Subject: Fw: Letter to Chairman Burns re review of Indian Point transformer fire

FYI

Sent via BlackBerry
Jenny Weil
Congressional Affairs Officer
U.S. Nuclear Regulatory Commission
202-510-8694 (cell)
301-415-1691 (office)

From: Kelly, Alyson (Gillibrand) [mailto:Alyson_Kelly@gillibrand.senate.gov]
Sent: Monday, June 08, 2015 02:05 PM
To: Weil, Jenny
Cc: Baugh, Jordan (Gillibrand) <Jordan_Baugh@gillibrand.senate.gov>
Subject: Letter to Chairman Burns re review of Indian Point transformer fire

Hi Jenny,

I hope all is well. I'm forwarding to your attention the attached letter from Sen. Gillibrand to Chairman Burns regarding the NRC's review of the recent transformer fire incident at Indian Point Energy Center. Thank you for your assistance in sharing this with Chairman Burns, and please let me know if you have any questions.

Best wishes,
Alyson

--
Alyson G. Kelly
Legislative Aide
Office of U.S. Senator Kirsten Gillibrand (NY)
478 Russell Senate Office Building
Washington, DC 20510
Tel: 202-224-4451
www.gillibrand.senate.gov

Sign up for Senator Gillibrand's newsletter:
<http://www.gillibrand.senate.gov/newsletter/>

Siwy, Andrew

From: Scott, Michael
Sent: Tuesday, June 09, 2015 5:33 PM
To: Nieh, Ho; McNamara, Nancy; Screnci, Diane; Sheehan, Neil; Tifft, Doug
Cc: Burritt, Arthur
Subject: IP SIT Exit Will Slip to Next Week

Team still awaiting some additional analysis results from licensee and has some questions on licensee's analysis. We agreed to plan on exiting next week. 7:30 tomorrow debrief for ORA canceled; I caught Dave and Dan up on the situation.

b-49

Siwy, Andrew

From: Burritt, Arthur
Sent: Tuesday, June 09, 2015 12:00 PM
To: Rogge, John
Cc: Nieh, Ho; Scott, Michael
Subject: FW: CORR-15-0041

Can you help me with the request below?

From: Rihm, Roger
Sent: Tuesday, June 09, 2015 11:03 AM
To: Burritt, Arthur
Cc: Setzer, Thomas; Stewart, Scott
Subject: RE: CORR-15-0041

Chairman's office is asking if you can verify. They are just proposing this sentence – if it's true - to clarify there is no link between fire and exemptions we have granted previously. If they can't add this, is there something else we could say?

From: Burritt, Arthur
Sent: Tuesday, June 09, 2015 10:54 AM
To: Rihm, Roger
Cc: Setzer, Thomas; Stewart, Scott
Subject: RE: CORR-15-0041

Did someone verify the statement added below is correct? The Region has not confirmed the statement below to my knowledge.

From: Rihm, Roger
Sent: Tuesday, June 09, 2015 7:32 AM
To: Burritt, Arthur
Subject: FW: CORR-15-0041

Art, see email below from Nan Gilles in the Chairman's office. Are you OK with her proposed addition or can you suggest alternate language? Thanks.

From: Gilles, Nanette
Sent: Monday, June 08, 2015 6:14 PM
To: Rihm, Roger
Subject: CORR-15-0041

Roger,

I am reviewing CORR-15-0041 for the Chairman. I need you to check with the Region on something I would like to add to the letter. There is a paragraph that talks about the fire protection exemptions that we have granted to IP. However, it fails to say anything about the lack of any relationship between the exemptions and the transformer failure on May 9th. I would like to add a sentence to this effect, something like what is highlighted below (this is an excerpt from the letter):

As requested, enclosed with this letter is a listing of all exemptions, including fire protection-related exemptions, granted by the NRC to Indian Point Units 2 and 3. The list is publicly available in the NRC's Agencywide Documents Access and Management System (ADAMS) at Accession No. ML12172A370. The list also is on the nrc.gov website, Indian Point page (<http://www.nrc.gov/info-finder/reactor/ip2.html>). While the list was compiled on June 20, 2012, it remains current as no exemptions have been granted since the list was created. The justification for each exemption is contained in the ADAMS documents (letter or Grant of Exemption) referenced with each listed exemption. It is worth noting that none of these exemptions played a role in the transformer failure event of May 9th.

Can you please run this by the Region to ensure they are OK with it or, if not, ask them to propose an alternative? A response by Wednesday morning or sooner would be helpful.

Thanks,
Nan

Nanette V. Gilles
Technical Assistant for Reactors
Office of Chairman Burns
U.S. Nuclear Regulatory Commission
301-415-1830

Fuhrmeister, Roy

From: Burritt, Arthur
Sent: Tuesday, June 09, 2015 1:17 PM
To: Frumkin, Daniel; Rogge, John
Cc: Klein, Alex; Fuhrmeister, Roy
Subject: RE: CORR-15-0041

Thanks Dan, I will propose the suggested wording in your email

From: Frumkin, Daniel
Sent: Tuesday, June 09, 2015 1:09 PM
To: Rogge, John; Burritt, Arthur
Cc: Klein, Alex; Fuhrmeister, Roy
Subject: RE: CORR-15-0041

I did go through all the fire protection exemptions and look for discussion of the main transformer. This was a cursory look (text searches through the documents for transformer), but I didn't find any exemptions related to the main transformer. I also looked through a recent UFSAR as a double check – I didn't find anything – see attached. I think at the time I did the attached review I didn't know about the floor drains issue.

Suggested words.

“NRC staff has reviewed the Indian Point exemptions listed in the reference and none of those exemptions are considered to have played a role in the transformer failure of May 9th.”

Note I removed the word “event” since I only looked at transformers not floor drain exemptions.

Dan

From: Rogge, John
Sent: Tuesday, June 09, 2015 12:53 PM
To: Burritt, Arthur
Cc: Frumkin, Daniel; Klein, Alex; Fuhrmeister, Roy
Subject: RE: CORR-15-0041

We need to convey that exemptions provide an alternate means of compliance. An exemption would provide an alternate means of exemption. They do not play a role as implied in not being more than just an excuse for not having something.

For the main transformers, they have a standard deluge system, and does not rely on an exemptions to exist. It is in compliance, So I think the answer would be that the exemptions did not play a role in the transformer fire.

Alex and Dan can you add insight.

From: Burritt, Arthur
Sent: Tuesday, June 09, 2015 12:01 PM
To: Rogge, John
Subject: FW: CORR-15-0041

For consideration

From: Rihm, Roger
Sent: Tuesday, June 09, 2015 11:22 AM
To: Stewart, Scott; Burritt, Arthur
Cc: Setzer, Thomas
Subject: RE: CORR-15-0041

Would one possibility be something like, "at this time. We do not believe there is any nexus between the recent fire and any of the fire protection related exemptions granted to IP in the past."

From: Stewart, Scott
Sent: Tuesday, June 09, 2015 11:04 AM
To: Burritt, Arthur; Rihm, Roger
Cc: Setzer, Thomas
Subject: RE: CORR-15-0041

We did not compare the exemptions or alternate compliance items vs the transformer fire, however any nexus would be incredible and surprising. So far, there have been no issues raised with the fire suppression system in suppressing the fire beyond the water in the switchgear room.

From: Burritt, Arthur
Sent: Tuesday, June 09, 2015 10:54 AM
To: Rihm, Roger
Cc: Setzer, Thomas; Stewart, Scott
Subject: RE: CORR-15-0041

Did someone verify the statement added below is correct? The Region has not confirmed the statement below to my knowledge.

From: Rihm, Roger
Sent: Tuesday, June 09, 2015 7:32 AM
To: Burritt, Arthur
Subject: FW: CORR-15-0041

Art, see email below from Nan Gilles in the Chairman's office. Are you OK with her proposed addition or can you suggest alternate language? Thanks.

From: Gilles, Nanette
Sent: Monday, June 08, 2015 6:14 PM
To: Rihm, Roger
Subject: CORR-15-0041

Roger,

I am reviewing CORR-15-0041 for the Chairman. I need you to check with the Region on something I would like to add to the letter. There is a paragraph that talks about the fire protection exemptions that we have granted to IP. However, it fails to say anything about the lack of any relationship between the exemptions and the transformer failure on May 9th. I would like to add a sentence to this effect, something like what is highlighted below (this is an excerpt from the letter):

As requested, enclosed with this letter is a listing of all exemptions, including fire protection-related exemptions, granted by the NRC to Indian Point Units 2 and 3. The list is publicly available in the NRC's Agencywide Documents

Access and Management System (ADAMS) at Accession No. ML12172A370. The list also is on the nrc.gov website, Indian Point page (<http://www.nrc.gov/info-finder/reactor/ip2.html>). While the list was compiled on June 20, 2012, it remains current as no exemptions have been granted since the list was created. The justification for each exemption is contained in the ADAMS documents (letter or Grant of Exemption) referenced with each listed exemption. It is worth noting that none of these exemptions played a role in the transformer failure event of May 9th.

Can you please run this by the Region to ensure they are OK with it or, if not, ask them to propose an alternative? A response by Wednesday morning or sooner would be helpful.

Thanks,
Nan

Nanette V. Gilles
Technical Assistant for Reactors
Office of Chairman Burns
U.S. Nuclear Regulatory Commission
301-415-1830



Indian Point Energy Center
450 Broadway, GSB
P.O. Box 249
Buchanan, N.Y. 10511-0249
Tel (914) 254-6700

John A Ventosa
Site Vice President
Administration

March 16, 2012
IPEC-ADM-12-009

Edward Moore, P.E.
Regional Spills Engineer
Department of Environmental Conservation, Region Three
21 South Putt Corners Road
New Paltz, New York 12561

Thomas Rudolph, P.E.
Regional Engineer
Department of Environmental Conservation, Region Three
100 Hillside Avenue, Suite 1W
White Plains, New York 10603

Re: Case No. R3-20110124-27, R3-20110124-27-NRD, R3-20110124-27-2, R3-20110124-27-3

Dear Mr. Moore and Mr. Rudolph:

In accordance with the Order on Consent (the "Order") in the above-referenced matter, this correspondence certifies that Respondents have completed the following items as required in the Schedule of Compliance (the "Schedule") attached to the Order:

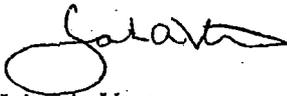
1. Submission of a Remedial Investigation Work Plan to determine the extent of subsurface (soil and groundwater) petroleum (transformer oil) contamination (Item I.A of the Schedule) on January 27, 2012 (copy enclosed);
2. Submission of a Transformer Secondary Containment Evaluation Plan to evaluate the integrity of the #21 main transformer secondary containment system (Item II.A of the Schedule) on February 16, 2012 (copy of plan revised to include NYSDEC staff comments enclosed).
3. Review of the Department's Chemical Bulk Storage regulations; completion of a compliance review of all registered tanks with those regulations, and development of a checklist of chemical bulk storage regulations applicable to Indian Point Units 2 and 3 for the purpose of allowing Respondents to provide annual updates as part of the Spills Prevention Report update required pursuant to 6 NYCRR Section 598.1(k)(2)(vii) and Annual Inspection required pursuant to 6 NYCRR Section 598.7(c)(2)(v) (Item III.A. of the Schedule). Initial checklists were completed and submitted to the Department on April 14, 2011;

Handwritten initials and signature:
b b m
A001
MRR

4. Determination of the Expected Useful Life of each tank and associated piping, based upon existing inspection reports or additional inspections, certifying that information as part of the Spill Prevention Report required pursuant to 6 NYCRR Section 598.1(k)(2)(vii), except for Tank 008-2, which has been removed from service and is being closed (Item III.C of the Schedule). Expected Useful Life information was submitted to the Department on April 14, 2011; and
5. Completion of the inspection and repairs of tanks HMST-11 and HMST 12 (Item III.B. of the Schedule). The inspection and repair report for HMST-11 was submitted to the Department on November 14, 2011 (copy enclosed). A copy of the inspection and repair report for HMST-12 is also enclosed. Tanks HMST-11 and HMST-12 presently comply with all applicable laws and regulations.

If you have any questions regarding the above, please contact Dara Gray at (914) 254-8414.

Sincerely,



John A. Ventosa
Site Vice President

cc: Kelli M. Dowell, Esq., Assistant General Counsel – Environmental, Entergy Corporation
Robert Walpole
Dara Gray
John Parker, Esq., Regional Attorney (*electronic copy in .pdf format on compact disk only*)
Andrew O. Guglielmi, Esq., NYSDEC Office of General Counsel (*electronic copy in .pdf format on compact disk only*)

US Nuclear Regulatory Commission
Attention Document Control Desk
Washington DC 20555-0001

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

X

In the Matter of Violations of Article 17 and 40 of
the Environmental Conservation Law ("ECL")
and Navigation Law and Parts 750 and 595
through 599 of Title 6 of the Official Compilation
of Codes, Rules and Regulations of the State of
New York ("6 NYCRR"),

ORDER ON CONSENT

Entergy Nuclear Indian Point 2, LLC and Entergy
Nuclear Indian Point 3, LLC,

Case Nos. R3-20110124-27-1
R3-20110124-27-NRD
R3-20110124-27-2
R3-20110124-27-3

Respondents.

(Westchester County)

X

WHEREAS:

1. The Department of Environmental Conservation ("DEC" or "the Department") is a Department of the State of New York ("the State") with jurisdiction to enforce the environmental laws of the State pursuant to Environmental Conservation Law ("ECL") Section 3-0302.
2. DEC has jurisdiction over water pollution control pursuant to ECL Article 17 and over petroleum spills under Navigation Law Article 12, and has jurisdiction over the bulk storage of chemicals pursuant to ECL Article 40.
3. The Commissioner of Environmental Conservation ("the Commissioner") is the designated trustee for New York State's natural resources. With regard to petroleum spills, the Department carries out the State's role as trustee for natural resources pursuant to ECL Section 1-0101, 3-0301, and 15-0601 and Article 12 of the New York Navigation Law (e.g. Navigation Law Section 170).

4. The purpose of ECL Article 40 (Hazardous Substances Bulk Storage Act) is to prevent releases of hazardous substances to air, water and lands of the State. In order to control bulk storage of hazardous substances, DEC promulgated regulations at 6 NYCRR Section 595 to 599 which is enforced under its Chemical Bulk Storage program.

5. This Order on Consent and Administrative Settlement ("Order") is issued pursuant to the Commissioner's authority under the New York ECL Sections 3-0301 and 71-2727 to protect and to restore the environment and the natural resources of the State of New York.

6. This Order is entered into without the taking of testimony, without any adjudication of issues of law or fact, and is in the parties' respective interests and in the public interest. Respondents affirmatively waive their respective rights to a public hearing in the manner provided by 6 NYCRR Part 622 for the matters and events addressed by this Order, consent to issuing and entering of this Order, agree not to contest the authority or jurisdiction of the Commissioner and of the Department to enter into or enforce this Order, and agree to be bound by the terms, provisions and conditions of this Order, including the Schedule of Compliance attached hereto.

RESPONDENTS AND THE FACILITY

7. The Indian Point Energy Center located in Buchanan, New York consists of two separate operating units, known as Unit 2 and Unit 3, respectively.

8. Entergy Nuclear Indian Point 2, LLC ("Indian Point 2") is a limited liability company with offices at 450 Broadway, Buchanan, NY 10511. Indian Point 2 is the owner of Unit 2 and its associated appliances and appurtenances, including the Unit 2 #21 main transformer, transformer deluge system and surrounding containment area and tanks for the bulk storage of chemicals.

9. Entergy Nuclear Indian Point 3, LLC ("Indian Point 3") is a limited liability company with offices at 450 Broadway, Buchanan, NY 10511. Indian Point 3 is the owner of Unit 3 and associated tanks for the bulk storage of chemicals.

10. "Respondents" as used hereafter means collectively Indian Point 2 and Indian Point 3, as appropriate.

11. Some of Respondent Indian Point 2's storage tanks are regulated by the Department pursuant to 6 NYCRR Sections 595 through 599 and are registered with the Department under registration number Chemical Bulk Storage #3-000107.

12. Some of Respondent Indian Point 3's storage tanks are regulated by the Department pursuant to 6 NYCRR Sections 595 through 599 and are registered with the Department under registration number Chemical Bulk Storage #3-000071.

13. The Unit 2 #21 main transformer ("Transformer"), manufactured by Siemens, has a total oil capacity of 19,740 gallons. The petroleum (transformer oil) is Hyvolt II, a severely hydrotreated naphthenic petroleum - a "petroleum" as defined in Section 172 of the Navigation Law. The Material Safety Data Sheet for the petroleum (transformer oil) confirms that it is a non-PCB oil.

14. The Transformer containment area is a moat consisting of concrete walls which go down to bedrock and is filled with bluestone ("containment moat" or "moat"). Respondents state that the containment moat has been designed consistent with National Fire Protection Association requirements to contain at least 110% of the volume of oil from the Transformer as well as the fire protection deluge water released at the design flow rate and for the design time period in the event a fire results from the failure of the Transformer.

15. In the event of a Transformer fire, the deluge system sprays water downward onto the Transformer, and is designed to descend through the bluestone in the containment

moat along with oil which may have been released during the event. Once in the moat, the oil should float on top of the deluge water. If the moat were allowed to fill to capacity, the oil would rise above the top of the bluestone and could become exposed to flames associated with a Transformer fire. However, the moat includes a design feature intended to maintain oil at a depth of six (6) inches or more below the top of the bluestone within the moat, thereby minimizing the potential for exposing the oil from flames.

16. This feature consists of a ten (10) inch diameter pipe with an inlet within and near the bottom of the moat and an outlet located at the top of the moat. The moat is designed so that when a substantial quantity of water collects within the moat during the operation of the deluge system, water from the bottom of the moat is forced up and out of the pipe so as to maintain the level of any oil in the moat more than six (6) inches below the top of the bluestone. The outlet to this pipe allows for the passive discharge of water collected at the bottom of the moat to the Unit 2 storm drain system without collection or sampling prior to discharge. Discharges entering the storm drain at this location flow into the Indian Point Energy Center discharge canal and, ultimately, to the Hudson River.

INDIAN POINT UNIT 2

21 MAIN TRANSFORMER EXPLOSION AND FIRE RELEASED PETROLEUM (TRANSFORMER OIL) TO THE ENVIRONMENT

Respondents state that:

17. At approximately 6:39 pm on November 7, 2010, a bushing within the Transformer failed. The bushing failure resulted in an explosion which breached the walls of the Transformer, causing the release of petroleum (transformer oil) and an ensuing fire.

18. The explosion and fire caused the water deluge system, located immediately above the Transformer and consisting of a series of spray nozzles, to activate automatically.

Deluge water was released from the system at a rate of 1,365 gallons per minute to suppress the fire.

19. At 6:54 pm, a second explosion of the Transformer occurred. Subsequently, emergency response personnel made their way to the Transformer and reported that the fire had been extinguished and began using fire hoses to spray fire suppression foam on the area affected by the explosion. Thereafter, the water deluge system was secured (*i.e.*, turned off).

20. At 7:01 pm, Respondent Indian Point 2 contacted the United States Nuclear Regulatory Commission ("NRC") Operations Center Duty Officer and the NRC's Senior Residents to notify them of the incident. The Unit 2 reactor automatically shutdown as a result of the Transformer failure and Respondent Indian Point 2's personnel maintained the reactor in a safe condition throughout the incident and thereafter.

21. At 8:28 pm, the Indian Point Operations Department completed a condition report indicating that petroleum (transformer oil) mixed with water from the deluge system had overflowed the Transformer containment moat and entered the adjacent turbine building at both the 15 ft. and 5 ft. elevations. The condition report indicated that all sump pumps had been secured within the turbine building and that no oil had been detected in the discharge canal or Hudson River at that time.

22. Following a telephone conversation among the Indian Point Emergency Planning Manager, the Commissioner of the Westchester County Department of Environmental Services, and the First Deputy of the New York State Office of Emergency Management, the State Office of Emergency Management notified the Department of the Transformer incident at 9:49 pm (Spill Report #1008234).

23. At 10:00 pm, the Oil Spill Response Organizations under contract with Respondent Indian Point 2 arrived for incident response and to commence cleanup activities.

24. At 3:53 am the following morning (November 8, 2010), an oil sheen was observed in the Indian Point discharge canal.

25. At 11:00 am on November 8, 2010, an oil sheen was observed in the discharge canal and outside the canal in the Hudson River. At 12:08 pm that day, Respondents contacted the Department's spill hotline to report this condition (Spill Report #1008306). This Spill Report number was closed by the Department on the same day as it was related to Spill Report #1008234 provided the prior evening.

SPILL RESPONSE, CLEANUP AND INVESTIGATION

Respondents state that:

26. On the morning of November 8, 2010, the Oil Spill Response Organizations commenced vacuuming oil from the containment moat, storm drains, and the turbine building floors and sumps. Absorbent booms and sweeps were installed at various locations along the length of the discharge canal. These activities continued for several weeks.

27. On November 17, 2010, absorbent booms were deployed onto the riverfront area of Respondent Indian Point 3's property approximately 300 feet south of the Indian Point Energy Center's discharge canal to address a sheen noted to be emanating from this area. While the booms remained in place, low-pressure power washing of the riverfront area was performed multiple times by Respondents' contractors such that within 21 days no visible sheen remained. No other areas of the riverfront were observed to be impacted, and the U.S. Coast Guard informed Respondent Indian Point 2 that no sheen had been observed as a result of its inspection of triple diamond (environmentally sensitive) areas in the Hudson River that could feasibly have been impacted by the release.

28. As of December 2, 2010, approximately 10,112 gallons of oil had been recovered from the Transformer, the containment moat, and areas outside the containment moat.

including the discharge canal, riverfront area and the Hudson River. The petroleum (transformer oil) was the fuel for the post-explosion fire, but a precise measure of the quantity consumed in the fire is not possible.

CONDITION OF THE # 21 MAIN TRANSFORMER CONTAINMENT MOAT

29. Subsequent investigation identified two construction-related structural conditions that contributed to the release of petroleum (transformer oil) from the containment moat to the environment during the incident and subsequent fire-fighting efforts. First, Respondent Indian Point 2 discovered a notch in the upper wall of the moat adjacent to the turbine building. Based upon oil staining in the area of the notch, some of the petroleum (transformer oil)/deluge water mixture appeared to have flowed in the direction of and through the notch, subsequently flowing into the adjacent turbine building and a nearby stormdrain. Second, following excavation of contaminated stone from the moat, Respondent Indian Point 2 discovered a hole in the bottom of the moat. Based upon oil staining in the area of the hole, some of the petroleum (transformer oil)/deluge water mixture traveled through the stone within the containment moat and exited the moat through this hole.

30. The existence of these two structural faults prevented the containment moat from retaining the petroleum (transformer oil) as designed, and resulted in releases of petroleum (transformer oil) to the ground beneath the moat (through the hole) and to storm drains which drain to the discharge canal and then the Hudson River (after exiting the moat through the notch).

31. While temporary containment measures remained in place to prevent oil from entering the Hudson River, the notch at the top of the moat was repaired and, following

engineering evaluations of support structures within the moat and other safety issues and after several months, the hole in the bottom of the moat was repaired.

**REGULATORY REQUIREMENTS OF THE CLEAN WATER ACT
AND STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM**

32. Respondents are co-permittees on State Pollutant Discharge Elimination System ("SPDES") permit number NY0004472 which authorizes the discharge of certain pollutants from Unit 2 and Unit 3 in accordance with specified limits into the Hudson River from the discharge canal.

33. The SPDES permit does not authorize the discharge of petroleum from the discharge canal to the Hudson River.

34. According to 6 NYCRR Section 750-2.8(a)(2), a SPDES permittee shall, at all times, properly operate and maintain all disposal facilities, which are installed or used by the permittee to achieve compliance with the conditions of its SPDES permit.

**NATURAL RESOURCE DAMAGES CAUSED BY PETROLEUM
RELEASE TO THE ENVIRONMENT**

35. New York's natural resources, including land, fish, shellfish, wildlife, biota, air, water, groundwater, and other such resources, are held in trust by the State for the benefit of its citizens. Navigation Law, Sections 170 and 172 (definition of "natural resources").

36. The release of petroleum (transformer oil) from Respondent Indian Point 2's facility into the Hudson River injured the natural resources of New York.

37. The Department incurred costs when responding to, assessing, and monitoring the discharge.

38. Respondent Indian Point 2 did not have a permit from the Department to discharge petroleum (transformer oil) into the Hudson River, a natural resource of the State of New York.

39. Pursuant to a formula utilized by the Department's Natural Resource Damage Unit to calculate the natural resource damages associated with a release of petroleum (transformer oil) to a river, the Department calculated that the natural resource damages due the State for the release of petroleum (transformer oil) to the Hudson River is \$62,000.

40. The Department incurred \$5,000 in natural resource damage assessment and restoration oversight costs in this matter.

**ENVIRONMENTAL CONSERVATION LAW VIOLATIONS
RELATED TO TRANSFORMER EXPLOSION
AND SPDES REQUIREMENTS**

41. Respondent Indian Point 2 violated:

A. ECL Section 17-0701(1)(a), which makes it unlawful for any person, until a SPDES permit has been granted, to make or cause to make or use any outlet or point source for the discharge of sewage, industrial waste or other wastes or the effluent therefrom, into the waters of this state because Respondent Indian Point 2 did not have a permit from the Department to discharge petroleum (transformer oil) into the Hudson River.

B. Respondents' SPDES permit number NY0004472, which does not authorize the discharge of petroleum (transformer oil) into the storm drain system or into the Hudson River.

C. ECL Section 17-0803 which makes it unlawful to discharge pollutants to the waters of the state from any outlet or point source without a SPDES permit or in a manner other than as prescribed by such permit, because Respondent Indian Point 2 did not have a permit from the Department to discharge petroleum (transformer oil) into the Hudson River; and 6 NYCRR Section 750-1.4(a) which provides no person shall discharge or cause a discharge of any pollutant without a SPDES permit having been issued to such person pursuant to this

Part.

D. 6 NYCRR Section 750-2.8(a) for failing to properly maintain all disposal facilities installed or used by the Respondent Indian Point 2 to achieve compliance with the conditions of the SPDES permit. The notch at the top of the moat and the hole at the bottom of the moat were not consistent with the moat's design, prevented the moat from functioning as intended, and resulted in the release of oil from the moat to storm drains and the environment.

E. Navigation Law Sections 173(1) which prohibits the discharge of petroleum, and 176(1) for failure to contain a discharge of petroleum, because Respondent Indian Point 2's containment moat did not contain the spill of petroleum (transformer oil), some of which entered the discharge canal and the Hudson River.

F. Environmental Conservation Law Section 17-0501, which makes it unlawful for any person, directly or indirectly, to throw, drain, run or otherwise discharge into such waters organic or inorganic matter that shall cause or contribute to a condition in contravention of the standards adopted by the department pursuant to ECL Section 17-0301. The standards adopted by the department pursuant to ECL Section 17-0301 are set forth in 6 NYCRR 703.2 "Narrative Water Quality Standards". 6 NYCRR Section 703.2 provides the Water Quality Standard for Oil and Floating Substances which prohibits "visible oil film or globules of grease" in the surface waters of the State.

G. Navigation Law Section 175 and 17 NYCRR Section 32.3, which require that any person responsible for causing a discharge shall immediately notify the department, but in no case later than two hours after the discharge, and in addition, that the owner or operator of any facility from which petroleum has been discharged; and any person who was in actual or constructive control of such petroleum immediately prior to such discharge, shall immediately give the department the notification required by this Part unless such owner, operator or person has adequate assurance that such notification has already been given. The

State Office of Emergency Management provided notification to the Department more than three hours after the incident occurred and Respondent Indian Point 2 did not independently and officially report the spill until 12:10 p.m. on November 8, 2010, more than seventeen hours after the Transformer explosion occurred.

42. ECL Section 71-1929 provides that a person who fails to perform any duty imposed by Titles 1 through 11 inclusive and Title 19 of Article 17, the rules and regulations promulgated thereunder, or orders or determinations of the commissioner promulgated thereto, shall be liable for a penalty of not to exceed thirty-seven thousand, five hundred dollars (\$37,500.00) per day for each violation, and may be enjoined from any continuing violation.

43. Navigation Law Section 192 provides that any person who violates any of the provisions of Article 12 of the Navigation law or any rule promulgated thereunder shall be liable to a penalty of not more than twenty-five thousand dollars (\$25,000.00) for each offense.

**ENVIRONMENTAL CONSERVATION LAW VIOLATIONS OF THE
CHEMICAL BULK STORAGE PROGRAM AT INDIAN POINT UNIT 2**

44. On January 25, 2011, Department staff performed an inspection of Unit 2 for the purpose of determining compliance with the Chemical Bulk Storage program regulations.

45. On January 25, 2011, Department staff documented that Respondent Indian Point 2 failed to comply with the requirements of the Chemical Bulk Storage Program regulations specified as follows.

A. 6 NYCRR Section 598.7(c)(2)(v) requires annual inspections that must include reviewing compliance with 6 NYCRR Parts 596, 598 and 599. Section 598.1(k) (2) (vii) of 6 NYCRR requires the status reports on compliance with Parts 596, 598 and 599 to be incorporated into the Spill Prevention Report. 6 NYCRR Section 598.1(k) requires the Spill Prevention Report.

B. Respondent Indian Point 2's annual compliance reports incorporated into the Spill Prevention Report did not include detail for three (3) tanks: for Tank numbered HMST-01, Respondent Indian Point 2's annual compliance report did not provide sufficient detail for a period of nine (9) years; for Tank numbered HMST-11, Respondent Indian Point 2's annual compliance report did not provide sufficient detail for a period of seven (7) years, and for Tank numbered HMST-12, Respondent Indian Point 2's annual compliance report did not provide sufficient detail for a period of seven (7) years.

C. 6 NYCRR Section 598.7(d)(1) requires that aboveground storage tanks must be inspected for tightness, structural soundness, corrosion, wear, foundation weakness and operability; tanks must be re-inspected no later than every five years from the date of initial inspection.

D. For tanks numbered HMST-11 and HMST-12 at Unit 2, Respondent Indian Point 2 had failed to complete the five (5) year inspection after an April 2009 inspection revealed further testing was required. These tests were not conducted at that time as required, and the inspection was not completed as required for a period of fifteen (15) months.

E. 6 NYCRR Section 598.7(c) provides that: (e) Uninspected facilities. If any portion of a storage tank system is not inspected as required, the owner or operator must take the uninspected portion of the system out-of-service pursuant to the requirements of section 598.10 of this Part.

F. Tanks numbered HMST-11 and HMST-12 remained in service at Unit 2 and were used to store hazardous substances listed in 6 NYCRR Part 597 from April 2009 until the summer of 2010. This constitutes improper use of uninspected tanks for a period of fifteen (15) months. No release of hazardous substances from these tanks or their respective secondary containments occurred during this period.

G. On January 31, 2011, the Department issued a Notice of Violation to Respondent Indian Point 2, informing it of the violations of the Environmental Conservation Law and New York State chemical bulk storage regulations.

**ENVIRONMENTAL CONSERVATION LAW VIOLATIONS OF THE
CHEMICAL BULK STORAGE PROGRAM AT INDIAN POINT UNIT 3**

46. On January 25, 2011, Department staff performed an inspection of Unit 3 for the purpose of determining compliance with the Chemical Bulk Storage program regulations.

47. On January 25, 2011, Department staff documented that Respondent Indian Point 3 had failed to comply with the requirements of the Chemical Bulk Storage Program regulations specified as follows.

A. 6 NYCRR Section 598.7(c)(2)(v) which requires annual inspections that must include reviewing compliance with 6 NYCRR Parts 596, 598 and 599. Section 598.1(k) (2) (vii) of 6 NYCRR requires the status reports on compliance with Parts 596, 598 and 599 be incorporated into the Spill Prevention Report. 6 NYCRR Section 598.1(k) requires the Spill Prevention Report.

B. Respondent Indian Point 3's annual compliance reports incorporated into the Spill Prevention Report did not include detail for Tanks numbered 001, 002, 003, 004, and 008-2 for a period of four years.

C. 6 NYCRR Section 599.13 which requires that the design life expectancy of all chemical bulk storage piping systems must be determined and specified in the Spill Prevention Report.

D. Respondent Indian Point 3 had failed to have the required design life expectancy specified in the Spill Prevention Report for the chemical bulk storage piping systems for Tanks numbered 002, 003, 004 and 008-2.

E. On January 31, 2011, the Department issued a Notice of Violation to Respondent Indian Point 3, informing it of the violations of the Environmental Conservation Law and New York State chemical bulk storage regulations.

48. Environmental Conservation Law Section 71-4303 provides for a penalty for violation of article 40 of the ECL of \$25,000.00 plus \$25,000.00 each day the violation continues.

NOW, having considered this matter and being duly advised, it is ORDERED that:

I. **Civil Penalty and Environmental Benefit Project**

A. Civil Penalty

Respondent Indian Point 2 shall be liable for a civil penalty in the amount of One Million Three Hundred Fifty Thousand Dollars (\$1,350,000.00) and Respondent Indian Point 3 shall be liable for a civil penalty in the amount of One Hundred Fifty Thousand Dollars (\$150,000.00), as follows:

1. Payable Penalty - Indian Point 2

Five Hundred Sixty-Two Thousand Five Hundred Dollars (\$562,500.00) shall be payable to the Department within forty-five (45) days of the Effective Date of this Order. DEC case numbers R3-20110124-27-1 and R3-20110124-27-2 shall be endorsed on the face of the check. The civil penalty shall be paid by check, bearing the signature of Respondent Indian Point 2 or an authorized representative of Indian Point 2, made payable to the "Department of Environmental Conservation" and forwarded to John Parker, Regional Attorney, New York State Department of Environmental Conservation, Region 3, 21 South Putt Corners Road, New Paltz, NY 12561.

2. Payable Penalty - Indian Point 3

Sixty-Two Thousand Five Hundred Dollars (\$62,500.00) shall be payable to the Department within forty-five (45) days of the Effective Date of this Order. DEC case number R3-20110124-27-3 shall be endorsed on the face of the check. The civil penalty shall be paid by check, bearing the signature of Respondent Indian Point 3 or an authorized representative of Indian Point 3, made payable to the "Department of Environmental Conservation" and forwarded to John Parker, Regional Attorney, New York State Department of Environmental Conservation, Region 3, 21 South Putt Corners Road, New Paltz, NY 12561.

3. Suspended Penalty - Indian Point 2

Two Hundred Forty-Seven Thousand Five Hundred Dollars (\$247,500.00) shall be suspended provided Respondent Indian Point 2 adheres to the terms and conditions of this Order applicable to it, including the Schedule of Compliance attached hereto.

4. Suspended Penalty - Indian Point 3

Twenty-Seven Thousand Five Hundred Dollars (\$27,500.00) shall be suspended provided Respondent Indian Point 3 adheres to the terms and conditions of this Order applicable to it, including the Schedule of Compliance attached hereto.

5. Environmental Benefit Project - Indian Point 2

Within forty-five (45) days of the Department's approval of the Environmental Benefit Project Implementation Plan pursuant to subparagraph 7 below, Respondent Indian Point 2 shall forward a check in the amount of Five Hundred Forty Thousand Dollars (\$540,000.00) to a third party approved by the Department, such approval not to be unreasonably withheld, to fund the implementation of the Plan. The unspecified Environmental Benefit Project shall be in conformance with the Department's Environmental Benefit Project Policy. Once Respondent

Indian Point 2 has paid these funds to a third party approved by the Department it shall have no further obligation for implementation of any Environmental Benefit Projects.

6. Environmental Benefit Project - Indian Point 3

Within forty-five (45) days of the Department's approval of the Environmental Benefit Project Implementation Plan pursuant to subparagraph 7 below, Respondent Indian Point 3 shall forward a check in the amount of Sixty Thousand Dollars (\$60,000.00) to a third party approved by the Department, such approval not to be unreasonably withheld, to fund the implementation of the Plan. The unspecified Environmental Benefit Project shall be in conformance with the Department's Environmental Benefit Project Policy. Once Respondent Indian Point 3 has paid these funds to a third party approved by the Department it shall have no further obligation for implementation of any Environmental Benefit Projects.

7. Environmental Benefit Project - Indian Point 2 and Indian Point 3

Within 90 days of the Effective Date of this Order, unless the Department determines that additional time is warranted and grants an extension in writing, Respondents shall submit to the Department a description of, and plan for, an Environmental Benefit Project for a project or projects in the amount set forth in Paragraphs I.A.5 and 6 of this Order (\$600,000.00) that includes a schedule for implementation ("EBP Implementation Plan"). The EBP Implementation Plan is subject to the Department's review and approval, such approval not to be unreasonably withheld, consistent with the procedures in Paragraph VIII of this Order. If the EBP Implementation Plan has not been approved by the Department within six months of the Effective Date of this Order, then the amount set forth in Paragraphs I.A.5 and 6 of this Order (\$600,000.00) shall be paid as a penalty for the violations identified in this Order by checks, bearing the signature of Respondents or an authorized representative of the Respondents, made payable to the "Department of Environmental Conservation" and forwarded to John Parker,

Regional Attorney, New York State Department of Environmental Conservation, Region 3, 21 South Platt Corners Road, New Paltz, NY 12561. DEC case numbers R3-20110124-27-1, R3-20110124-27-2, and R3-20110124-27-3 shall be endorsed on the face of the checks. The failure to obtain Department approval of the EBP Implementation Plan shall not constitute a violation of this Order, the ECI, or Department regulations. Any statements, whether oral or written, that Respondents (or a third party at the request of the Respondents) makes with respect to the Environmental Benefit Project will include language stating that the project was undertaken as a Consent Order requirement as part of the resolution of an enforcement matter brought by the Department.

II. Natural Resources Damages and Costs Payments.

Respondent Indian Point 2 shall pay for Natural Resources Damages and Assessment and Oversight Costs in the amount of Sixty-Two Thousand Dollars (\$62,000) plus Five Thousand Dollars (\$5,000) as follows:

A. Assessment and Oversight Costs. Five Thousand Dollars (\$5,000) for NRD assessment and restoration oversight costs incurred by the Department and its employees, representatives, agents and others by check, money order, or by electronic funds transfer, payable to "NYSDEC-Natural Resource Damages Fund."

B. Natural Resources Damages. Sixty-Two Thousand Dollars (\$62,000) for Natural Resources Damages caused by the release of petroleum (transformer oil) into the Hudson River, by check, money order, or by electronic funds transfer, payable to "NYSDEC-Natural Resource Damages Fund".

Both Natural Resources Damages and Assessment and Oversight Costs payments shall be made no later than forty-five (45) days after the effective date of this Order, and shall be sent to:

Office of General Counsel
625 Broadway, 14th Floor
Albany, N.Y. 12233-1500
ATTN: Sharon L. Brooks

DEC case number R3-20110124-27-NRD shall be endorsed on the face of the checks.

The provisions of this Order are not intended to and shall not be interpreted to restrict the ultimate authority and discretion of the Commissioner to determine the use of the funds received for natural resource damages and assessment and oversight costs in accordance with applicable law.

III. Schedule of Compliance.

Respondents shall strictly comply with the terms of this Order and with the attached Schedule of Compliance, including requirements related to the timely filing of any report(s), plan(s), proposal(s) and other submissions made pursuant thereto. The Schedule of Compliance and all such submissions are hereby deemed incorporated into this Order, upon approval by the Department if such approval is required, and, to the extent they include affirmative obligations on the part of Respondents, those obligations shall be fully enforceable as part of this Order.

IV. Notice of Noncompliance.

A. In the event that the Department determines, in its reasonable discretion, that a Respondent has violated any provision of this Order, including, but not limited to, the failure of such Respondent to comply fully and in timely fashion with any provision of this Order, the Department may serve upon the Respondent a written notice of noncompliance setting forth the nature of, and factual basis for, the violation(s). Service of such notice may be by personal service or by certified mail return receipt requested (restricted delivery not required) to Robert Walpole, Licensing Manager, at the address of the Respondent specified in

Paragraphs 8 or 9 of this Order, or, if such service is refused or cannot be completed, by ordinary mail, with a copy sent by certified mail to Kelli M. Dowell, Esq., Assistant General Counsel - Environmental, Entergy Corporation, P.O. Box 1640, Jackson, MS 39215.

B. In the event that Respondent(s) has been served a Notice of Noncompliance for items required in this Order or the attached Schedule of Compliance, Respondent(s) shall be granted a reasonable period from receipt of such notice to comply with those identified items without incurring penalty for the identified noncompliance, which shall not exceed thirty (30) days. During that time, Respondent(s) shall be granted a meeting with Department staff to discuss and address the identified violations. Respondent(s) shall submit proof of compliance to the Department within thirty days of receipt of the notice from the Department or Respondent(s) may submit a request to the Department for additional time to achieve compliance together with supporting documentation for the request, the approval of such request not to be unreasonably withheld. If Respondent(s) fails to comply with those items identified in the Notice of Noncompliance, or if Respondent(s) fails to submit to the Department proof of such compliance to the Department within thirty (30) days or within the additional time granted by the Department, the Department shall, in its reasonable discretion, determine whether assessment of all or part of the suspended penalties as set forth in Paragraphs I(A)(3) or I(A)(4) is appropriate.

V. Release.

Conditioned upon the satisfactory performance by Respondents of all of their obligations under this Order, and in consideration of the payment that will be made by Respondents to the Department pursuant to Subparagraph I(A)(1) or Subparagraph I(A)(2) above, as appropriate, and subject only to this Order:

A. The Commissioner, as the designated Trustee for New York State's natural resources, releases Respondents, their parents and affiliates, and each of their officers, directors, employees, agents and successors and assigns (including successors in title) from all claims or causes of action under any federal or State law, and the applicable regulations, for natural resource damages, for natural resource damage assessment costs and restoration oversight costs, resulting from the matters and events described in this Order, including, but not limited to, the release of petroleum (transformer oil) into the Hudson River, described above; and

B. The Department releases Respondents, their parents and affiliates, and each of their officers, directors, employees, agents and successors and assigns (including successors in title) from all claims and causes of action under any federal or State law, and the applicable regulations, resulting from the matters and events described in this Order, including, but not limited to, the identified release of petroleum (transformer oil) into the environment on November 7, 2010, and resulting from acts or omissions related to the implementation of the Chemical Bulk Storage program prior to and including January 25, 2011.

VI. Reservation of Rights and Reopeners

A. Notwithstanding any other provision of this Order, the Commissioner reserves the right to initiate proceedings against Respondent Indian Point 2 and its successors and assigns (including successors in title) seeking recovery of natural resource damages based on (1) conditions that, as of the Effective Date of this Order, were unknown to the Commissioner, and were undiscoverable with the exercise of due diligence and that contribute to and materially increase an injury to, destruction of, or loss of natural resources ("Unknown Conditions"); or (2) information received by the Commissioner after the date of execution of this Order which indicates that there is material injury to, destruction of, or loss of natural resources of a type and extent unknown to the Commissioner and which were undiscoverable

with the exercise of due diligence as of the date of execution of this Order ("New Information"). An increase solely in the assessment of the magnitude of an injury, destruction or loss to natural resources or in the estimated or actual natural resource damages, all arising from or relating to the release, threatened release or disposal of petroleum (transformer oil) at or from the Indian Point Energy Center, shall not be considered to be "Unknown Conditions" or "New Information" within the meaning of this paragraph.

B. Nothing in this Order shall be construed as barring, affecting or diminishing any rights or authorities of the Department, the Commissioner, or the Commissioner's designee, (i) to pursue Respondents, their parents and affiliates, and each of their officers, directors, employees, agents and successors and assigns (including successors in title) for any action, other than for any matter described herein or (ii) to pursue or to take any action whatsoever against any other party.

C. Failure of Respondents to comply with the terms of this Order shall be deemed to be a violation of this Order and of the ECL and, in the event of any such violation, the Department shall be entitled to enforce the terms of this Order, and seek penalties and injunctive relief as provided by applicable law and regulation.

D. Compliance with this Order shall not excuse nor be a defense to charges of any violations of the ECL or any regulation or permit issued thereunder, which may occur subsequent to the date of this Order.

VII. Submissions.

All reports and submissions required in this Order shall be submitted to the Department, via U.S. Mail, or overnight delivery (e.g., Federal Express) as follows:

A. a hardcopy original and an electronic copy in .pdf format on compact disc

to:

1. Edward Moore, P.E.
Regional Spills Engineer
Department of Environmental Conservation, Region Three
21 South Putt Corners Road
New Paltz, New York 12561
Re: Case No. R3-20110124-2, R3-20110124-27-NRD, R3-20110124-27-2, R3-20110124-27-3
2. Thomas Rudolph, P.E.
Regional Engineer
Department of Environmental Conservation, Region Three
100 Hillside Avenue, Suite 1W
White Plains, New York 10603-2860;
Re: Case No. R3-20110124-27, R3-20110124-27-NRD, R3-20110124-27-2, R3-20110124-27-3

B. An electronic copy in .pdf format on compact disc to the:

John Parker, Regional Attorney
Office of General Counsel
Department of Environmental Conservation, Region Three
21 South Putt Corners Road
New Paltz, New York 12561
Re: Case No. R3-20110124-27, R3-20110124-27-NRD, R3-20110124-27-2, R3-20110124-27-3

C. An electronic copy in .pdf format on compact disc to:

Andrew O. Guglielmi, Esq.
Office of General Counsel
Department of Environmental Conservation
625 Broadway, 14th Floor
Albany, New York 12233-1500
Re: Case No. R3-20110124-27-NRD

Respondents shall be responsible for the content of any submissions made pursuant to this Order and shall certify in writing to the Department that such submission complies with the requirements set forth in this Order. Submission of any material containing assertions of fact shall be considered an affirmative representation by Respondents of the truth of such assertions. Respondents shall be in violation of this Order if, in the Department's reasonable

judgment, any submission is of such poor quality that it does not constitute a good faith effort to comply with the provisions of this Order.

VIII. Review of Submitted Remedial Plans and Proposals.

A. After review of any remedial plan or proposal required by this Order and its Schedule of Compliance, the Department shall notify Respondent(s), in writing, of its approval or disapproval of the submission, such approval not to be unreasonably withheld. If the Department approves the submission, Respondent(s) shall implement it in accordance with its schedule and terms, as approved. If the Department disapproves the submission, the Department shall provide to Respondent(s) written notice of its disapproval, specifying with reasonable particularity the grounds for disapproval. Within thirty (30) days after Respondent(s) receive written notice of disapproval, Respondent(s) shall submit a revised submission which responds to each of the Department's specified grounds for disapproval. After the Department's receipt of Respondent(s)' revised submission, the Department shall notify Respondent(s), in writing, of its approval or disapproval of such revised submission, such approval not to be unreasonably withheld. If the Department approves the revised submission, Respondent(s) shall implement it in accordance with its schedule and terms, as approved. If the revised submission is not approvable as submitted, the Department, at its option, may disapprove it or may approve it on condition that Respondent(s) accept such reasonable modifications as may be specified by the Department to make it approvable. If the Respondent(s) do not accept such modifications, the revised submission will be disapproved. If the Department disapproves the revised submission, the Respondent(s) shall be in violation of this Order. Upon Department approval, a submission or revised submission shall be deemed incorporated into this Order.

IX. Inspections.

For the purpose of insuring compliance with this Order, and with related provisions of the ECL and regulations promulgated thereunder, representatives of the Department shall be permitted access to relevant records during reasonable hours to inspect and/or perform such tests which the Department reasonably deems appropriate to determine the status of Respondent(s)' compliance.

X. Other Approvals.

Respondents shall be obligated to obtain whatever permits, easements, rights of entry, approvals or authorizations may be necessary in order to carry out its obligations under this Order. Except as otherwise provided in this Order, this Order shall not relieve the Respondents of the obligation to comply with any other laws, rules or regulations of the State of New York or any other governmental authority which are applicable to Respondents' implementation of the Schedule of Compliance, nor preclude or limit enforcement action as may be authorized by law for violations of such other laws, rules or regulations.

XI. Other Remedies.

(a) Nothing contained in this Order shall be construed as barring, diminishing, adjudicating or in any way affecting (1) any legal, administrative or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against anyone other than Respondents, their parents and affiliates, and each of their officers, directors, employees, agents and successors and assigns (including successors in title); (2) the Department's right to enforce, administratively or at law or in equity, the terms, provisions and conditions of this Order against Respondents, in the event that Respondents shall be in breach of the provisions hereof; (3) the Department's right to seek to require pursuant to the provisions of Paragraph VI(C) of this Order that Respondents take such additional measures as may be necessary for the

protection of public health or the environment, including interim remedial measures; or (4) the Respondents' rights available pursuant to this Order, the Environmental Conservation Law, or as otherwise provided by law, including the right to challenge any action by the Department, whether by administrative hearing, including 6 NYCRR Part 622, judicial review, or otherwise, to the extent permitted by law.

(b) This Order shall not be construed to prohibit the Commissioner or the Commissioner's duly authorized representative from exercising any summary abatement powers, either at common law or as granted pursuant to statute or regulation.

XII. Use of Order.

This Order shall not be admitted as evidence of an admission or declaration against interest against either Respondents, their parents and affiliates, and each of their officers, directors, employees, agents and successors and assigns (including successors in title), or the Department in any proceeding other than one to enforce the terms of this Order. Without limiting the generality of the foregoing sentence, neither the matters and events addressed herein, the imposition of the penalty recited herein nor the fact of Respondents' execution of this Order shall be used in any other context as an indication of Respondents' culpability or non-compliance with environmental obligations.

XIII. Indemnification

Respondents or their successors or assigns shall indemnify and hold harmless the Department, the State of New York, and their representatives and employees for all claims, suits, actions, damages and costs of every name and description arising out of or resulting from the fulfillment or attempted fulfillment of this Order by Respondents or their affiliates,

successors or assigns.

XIV. Force Majeure.

Respondents shall not be in default of compliance with this Order to the extent that Respondents may be unable to comply with any provision of this Order because of the action of a national or local government body or court, an act of God, war, strike, riot or catastrophe as to any of which the negligence or willful misconduct on the part of Respondents was not a proximate cause; provided, however, that Respondents shall use their best efforts to comply. Respondents shall provide written notice to the Department promptly upon obtaining knowledge of such event. In addition, Respondents shall, within twenty-one days of such event, provide written request to the Department for an appropriate extension or modification to this Order, along with documentation evidencing entitlement to relief herein. Relief under this clause shall not be available to Respondents, with regard to a particular event, if Respondents fail to provide timely notice of such event. The Respondents shall have the burden of proving entitlement to relief under this clause, by preponderance of the evidence.

XV. Modification.

This Order may not be modified except in a writing executed by the DEC Commissioner or the DEC Commissioner's authorized representative and the Respondents.

XVI. Entire Agreement.

The provisions hereof shall constitute the complete and entire Order between Respondents and the Department concerning the matters contained herein. No informal advice, guidance, suggestions or comments by the Department regarding reports, proposals, plans, specifications, schedules or any other writing submitted by Respondents shall be construed as relieving Respondents of their obligations to obtain such formal approvals as may be required by this Order.

XVII. Binding Effect.

This Order shall be deemed to bind the Respondents and their successors and assigns. Respondents shall be responsible for ensuring that all work performed under this Order is in compliance with the terms of the Order.

XVIII. Headings.

The section headings set forth in this Order are included for convenience of reference only and shall be disregarded in the construction and interpretation of any of the provisions of this Order.

XIX. Effective Date.

This Order on Consent and Administrative Settlement shall not become effective until it is signed by the Regional Director on behalf of the Commissioner (the "Effective Date").

Dated: New Paltz, New York

March , 2012

JOSEPH J. MARTENS
Commissioner
Department of Environmental Conservation

By:

WILLIAM C. JANEWAY
Regional Director, Region 3
Department of Environmental Conservation

This Order on Consent and Administrative
Settlement has been reviewed and
approved by the Regional Attorney as to
form.

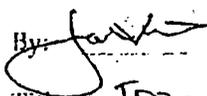
By:

JOHN L. PARKER
Regional Attorney

CONSENT BY RESPONDENT

Respondent Indian Point 2 hereby consents to the issuance and entry of this Order on Consent and Administrative Settlement without further notice, waives its right to a hearing in this matter, and agrees to be bound by the terms, conditions and provisions of this Order. The undersigned represents and affirms that they have the legal authority to bind Respondent(s) to the terms and conditions of this Order on Consent and Administrative Settlement.

Entergy Nuclear Indian Point 2, LLC

By: 
Title: IPEC SITE VICE PRESIDENT

ACKNOWLEDGMENT

On this 16 day of MARCH, in the year 2012, before me, the undersigned, personally appeared JOHN A. VENTOSA, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies) as shown in the instrument, and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

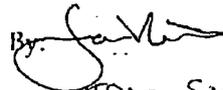

Notary Public

CHRISTINA LEITMANN
Notary Public, State of New York
Registration #01LES070948
Qualified in Putnam County
Commission Expires January 8, 2015

CONSENT BY RESPONDENT

Respondent Indian Point 3 hereby consents to the issuance and entry of this Order on Consent and Administrative Settlement without further notice, waives its right to a hearing in this matter, and agrees to be bound by the terms, conditions and provisions of this Order. The undersigned represents and affirms that they have the legal authority to bind Respondent(s) to the terms and conditions of this Order on Consent and Administrative Settlement.

Entergy Nuclear Indian Point 3, LLC

By: 

Title: IPEC SITE VICE PRESIDENT

ACKNOWLEDGMENT

On this 16 day of MARCH, in the year 2012, before me, the undersigned, personally appeared JOHN A. VENTOSA, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies) as shown in the instrument, and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.


Notary Public

CHRISTINA LEITMANN
Notary Public, State of New York
Registration #01LE5070946
Qualified in Putnam County
Commission Expires January 6, 2015

SCHEDULE OF COMPLIANCE

Respondent: Entergy Nuclear Indian Point 2, LLC,
Entergy Nuclear Indian Point 3, LLC

Site or Facility: Indian Point Unit 2, including the Unit 2 #21 main transformer and chemical bulk storage tanks, and Indian Point Unit 3 including chemical bulk storage tanks

DEC Case No.: R3-20110124-27, R3-20110124-27-NRD, R3-20110124-27-2, and R3-20110124-27-3

1. **Self-certification and Delivery:** All submissions to the Department required under this Schedule of Compliance shall comply with the requirements of Section VII of the Order, including with respect to self-certification and delivery. Respondent(s) shall submit to DEC, within fifteen (15) days of each milestone date set forth in this Order, a signed statement certifying that the payment or task required was completed by that date, and that it was done in the manner required by this Order.

Submission of the required certification shall be considered an affirmative representation by the Respondent of the truth of its contents. Any knowingly false statement made therein shall be punishable pursuant to Section 210.45 of the Penal Law, and as may be otherwise authorized by law.

Failure to submit a required certification by the due date shall be a violation of this Order, and shall establish a legal presumption that Respondent(s) has failed to comply with that requirement of the Schedule.

2. **Remedial Activities and Milestones:** Respondent(s) shall timely perform the activities set forth below in a good and workmanlike manner and supply all required labor, equipment and materials at Respondent's own cost and expense:

I. PETROLEUM (TRANSFORMER OIL) RELEASE

REMEDIAL INVESTIGATION WORK PLAN

A. Within ten (10) days of the Effective Date of this Order:

Respondent shall submit to the Department for approval, a Remedial Investigation Work Plan to determine the extent of subsurface (soil and groundwater) petroleum (transformer oil) contamination. Specifically, the Remedial Investigation shall determine the extent of free petroleum (transformer oil) product in/on the water table, and the extent of petroleum (transformer oil) contaminated groundwater in the vicinity of the #21 main transformer location; any petroleum (transformer oil) that may be trapped; and other areas where the release may have impacted the environment, including the area behind the discharge canal wall.

The Remedial Investigation Work Plan shall include sample analyses using EPA Methods 8260/8270 and total petroleum hydrocarbons testing for all water and soil samples. The Remedial Investigation Work Plan shall also include an implementation schedule consistent with terms, requirements, and conditions of this Schedule of Compliance. Once approved by the Department, the terms, requirements, and schedule of the Remedial Investigation Work Plan, duly approved by the Department, shall be an enforceable part of this Order on Consent.

Upon Department approval of the Remedial Investigation Work Plan, Respondent shall implement the Remedial Investigation Work Plan.

REMEDIAL INVESTIGATION REPORT

B. Within one hundred twenty (120) days of receipt by Respondent of Department approval of the Remedial Investigation Work Plan:

Respondent shall submit to the Department, a Remedial Investigation Report, and shall include recommendations addressing the removal of petroleum (transformer oil) contamination identified during the Remedial Investigation.

REMEDIAL ACTION PLAN

C. Within thirty (30) days of receipt by Respondent of any Department comments on the recommendations required pursuant to section I.B. above:

Respondent shall submit to the Department for approval, a Remedial Action Plan to address the identified environmental impacts of the petroleum (transformer oil) release of November 2010. The Remedial Action Plan shall identify cleanup standards and an implementation schedule. The terms, requirements, and conditions of the Remedial Action Plan, duly approved by the Department, shall be an enforceable part of this Order on Consent.

II. TRANSFORMER SECONDARY CONTAINMENT SYSTEMS

**SECONDARY CONTAINMENT SYSTEM EVALUATION PLAN:
#21 MAIN TRANSFORMER**

A. Within ten (10) days of the Effective Date of this Order:

Respondent shall submit to the Department for approval, a Transformer Secondary Containment System Evaluation Plan to evaluate the integrity of the #21 main transformer secondary containment system ("#21 Main Transformer Evaluation Plan"). The #21 Main Transformer Evaluation Plan shall include hydrostatic testing. If Respondent elects to use a method other than a hydrostatic test, Respondent's #21 Main Transformer Evaluation Plan shall be technically supported and shall demonstrate, to the Department's satisfaction, that the secondary containment system is able to collect and contain any potential release from the #21 main transformer. The terms, requirements, and conditions of the #21 Main Transformer Evaluation Plan, duly approved by the Department, shall be an enforceable part of this Order on Consent.

**SECONDARY CONTAINMENT SYSTEM ENGINEERING PLANS AND
SPECIFICATIONS: #21 MAIN TRANSFORMER**

B. Within forty-five (45) days of the Effective Date of this Order:

Respondent shall submit to the Department for approval, engineering plans and specifications for the secondary containment system (the "#21 Main Transformer Engineering Plans and Specifications"), specifying any work that may be required to ensure that the secondary containment system is capable of containing any petroleum (transformer oil) release from #21 main transformer.

The #21 Main Transformer Engineering Plans and Specifications for required work shall include:

- i. The closure and discontinuance of the use of the stormwater disposal system included in the secondary containment system;
- ii. Sufficient testing to confirm that the secondary containment system is structurally supported, impermeable, and has sufficient volume to contain the contents of #21 main transformer and the likely amount of firefighting water that would be released in the event of a fire; and
- iii. If Respondent will retain the current (original) design of the secondary containment system for #21 main transformer then the capability and capacity shall be reviewed to determine whether it meets the current requirements under the Spill Prevention Control and Countermeasure Plan. This analysis shall be included in the #21 Main Transformer Engineering Plans and Specifications.

The #21 Main Transformer Engineering Plans and Specifications shall be certified and stamped by a New York State Licensed Professional Engineer. The terms, requirements, and conditions of the #21 Main Transformer Engineering Plans and Specifications, duly approved by the Department, shall be an enforceable part of this Order on Consent.

C. Within thirty (30) days of the Department approval of the #21 Main Transformer Engineering Plans and Specifications:

Respondent shall submit to the Department a copy of the final design for the #21 main transformer secondary containment system.

D. By May 15, 2012:

Respondent shall complete the secondary containment system evaluation and repairs in accordance with the Department approved #21 Main Transformer Engineering Plans and Specifications. Respondent shall also submit to the Department a letter of certification, stamped by a New York State Licensed Professional Engineer, that the secondary containment system has been installed or repaired in accordance with the Department approved #21 Main Transformer Engineering Plans and Specifications and an evaluation and certification that the secondary containment system provides adequate secondary containment of petroleum spill events that could occur from the #21 main transformer.

**SECONDARY CONTAINMENT SYSTEM EVALUATION PLAN:
#22, #31, AND #32 MAIN TRANSFORMERS**

E. Within six (6) months of the Effective Date of this Order:

Respondent shall submit to the Department for approval, a Transformer Secondary Containment System Evaluation Plan(s) to evaluate the integrity of the #22, #31 and #32 main transformers secondary containment systems ("#22, #31 and #32 Main Transformers Evaluation Plan"). The #22, #31 and #32 Main Transformers Evaluation Plan shall include hydrostatic testing. If Respondent elects to use a method other than a hydrostatic test, Respondent's #22, #31 and #32 Main Transformers Evaluation Plan shall be technically supported and shall demonstrate, to the Department's satisfaction, that the secondary containment systems are able to collect and contain any potential release from the transformers. The terms, requirements, and conditions of the #22, #31 and #32 Main Transformers Evaluation Plan, duly approved by the Department, shall be an enforceable part of this Order on Consent.

**SECONDARY CONTAINMENT SYSTEM ENGINEERING PLANS AND
SPECIFICATIONS: #22, #31, AND #32 MAIN TRANSFORMERS**

F. Within thirty (30) days of Department approval of the #22, #31 and #32 Main Transformers Evaluation Plans:

Respondent shall submit to the Department for approval, engineering plans and specifications for the #22, #31 and #32 main transformers secondary containment systems (the "#22, #31 and #32 Main Transformers Engineering Plans and Specifications"), specifying any work that may be required to ensure that the secondary containment systems are capable of containing any petroleum (transformer oil) release from each transformer.

The #22, #31 and #32 Main Transformers Engineering Plans and Specifications for required work shall include:

- i. The closure and discontinuance of the use of any stormwater disposal system included in the secondary containment systems;
- ii. Sufficient testing to confirm that the systems are structurally supported, impermeable, and have sufficient volume to contain the contents of #22, #31 and #32 main transformers and the likely amount of firefighting water that would be released in the event of a fire; and
- iii. If Respondent will retain the current (original) design of the secondary containment systems for #22, #31 and #32 main transformers then the capability and capacity of each secondary containment system shall be reviewed to determine whether it meets the current requirements under the Spill Prevention Control and Countermeasure Plan. This analysis shall be included in the #22, #31 and #32 Main Transformers Engineering Plans and Specifications.

The #22, #31 and #32 Main Transformers Engineering Plans and Specifications shall be certified and stamped by a New York State Licensed Professional Engineer. The terms, requirements, and conditions of the #22, #31 and #32 Main Transformers Engineering Plans and Specifications, duly approved by the Department, shall be an enforceable part of this Order on Consent.

G. Within thirty (30) days of the Department approval of the #22, #31 and #32 Main Transformers Engineering Plans and Specifications:

Respondent shall submit to the Department a copy of the final design for the #22, #31 and #32 main transformers secondary containment systems.

**SECONDARY CONTAINMENT SYSTEMS FOR #22, #31 AND #32 MAIN TRANSFORMER
SHALL BE COMPLETE AND CERTIFIED BY DECEMBER 31, 2012**

H. **By December 31, 2012:**

Respondent shall complete the secondary containment systems evaluation and repairs in accordance with the Department approved #22, #31 and #32 Main Transformers Engineering Plans and Specifications. Respondent shall also submit to the Department a letter of certification, stamped by a New York State Licensed Professional Engineer, that the secondary containment systems have been installed or repaired in accordance with the Department approved #22, #31 and #32 Main Transformers Engineering Plans and Specifications and an evaluation and certification that the secondary containment systems provide adequate secondary containment of petroleum spill events that could occur from the #22, #31 and #32 main transformers.

III. CHEMICAL BULK STORAGE

A. Within thirty (30) days of the Effective Date of this Order:

Respondent shall review Department Chemical Bulk Storage regulations; complete a compliance review of all registered tanks; and shall develop a checklist of regulations applicable to the Indian Point Nuclear Generating Facility. The checklist shall be developed for the purpose of allowing Respondent to provide annual updates as a part of the Spills Prevention Report update required pursuant to 6 NYCRR Section 598.1(k)(2)(vii) and Annual Inspection required pursuant to 6 NYCRR Section 598.7(c)(2)(v).

B. Within thirty (30) days of the Effective Date of this Order:

Respondent shall conduct inspections of tanks HMST-11 and HMST-12 pursuant to 6 NYCRR Section 598.7(d), and shall complete any required repairs. Respondent shall submit to the Department the results of the required testing, the inspection reports, and a certificate that such tank fully complies with all applicable laws and regulations.

C. Within thirty (30) days of the Effective Date of this Order:

Respondent shall determine the Expected Useful Life of each tank and associated piping, based upon existing inspection reports or additional inspections, and shall certify that information as a part of the Spill Prevention Report required pursuant to 6 NYCRR Section 598.1(k)(2)(vii), except Tank 008-2, which has been closed.

D. Within sixty (60) days of the Effective Date of this Order:

Respondent shall submit a plan to the Department for approval, to replace Tank 008-2 with another tank which shall include secondary containment meeting the requirements of 6 NYCRR Section 599.9 (the "Tank 008-2 Replacement Plan"). Piping shall not penetrate the secondary containment system and operating valves shall be installed on the piping between the tank and the secondary containment. The Tank 008-2 Replacement Plan shall be certified and stamped by a New York State Licensed Professional Engineer. The terms, requirements, and conditions of the Tank 008-2 Replacement Plan, duly approved by the Department, shall be an enforceable part of this Order on Consent.

Schmidt, Wayne

From: Schmidt, Wayne
Sent: Monday, May 11, 2015 3:03 PM
To: Setzer, Thomas; Stewart, Scott; 'Frank Arner'
Subject: RE: UPDATE 5/11 - Indian Point Plant Trip and UE due to a Main Transformer Failure

I gave their PRA Internal flooding analysis a quick review – it looks like they would need somewhere between 3 and 4 inches of water around the switchgear to cause a LOOP/SBO, this also may be conservative (may actually a take higher water level to cause a fault). It appears that the flow limit of the floor drains and the amount of water that could flow under the door to the EDG room, which apparently have a relatively high capacity drain sump pump out arrangement, would be the limit on how much in leakage there could be to the switchgear room without any potential impact..

From: Setzer, Thomas
Sent: Monday, May 11, 2015 2:52 PM
To: Schmidt, Wayne
Subject: FW: UPDATE 5/11 - Indian Point Plant Trip and UE due to a Main Transformer Failure
Importance: High

Sorry I just left you off this. We should hear more tomorrow.

From: Setzer, Thomas
Sent: Monday, May 11, 2015 2:50 PM
To: Burritt, Arthur; Dorman, Dan; Lew, David; Screnci, Diane; Scott, Michael; Tifft, Doug; McNamara, Nancy; Sheehan, Neil; Stewart, Scott; Newman, Garrett; Nieh, Ho
Subject: UPDATE 5/11 - Indian Point Plant Trip and UE due to a Main Transformer Failure
Importance: High

Good afternoon-

The plant has reached Mode 4, Hot Shutdown, and is in a stable, safe condition. The licensee has assembled teams to investigate the transformer failure, and estimates an outage of approximately 18 days.

I have just provided a PN to the admin staff to issue. It has been reviewed by PAO, SLO, licensee, Residents and Dave Lew. Thanks to everyone for your comments on the PN.

I have been on the phone with the IPEC Licensing Manager (Bob Walpole), as well as the EPA rep (Paul G.) for our region with the SLO, and I feel confident that we have communicated with both our internal and external stakeholders. I also provided some information to Kim Morganbutler, TA, who called to inquire about some basic information about the event.

I just learned that Geri Shapiro has requested a briefing through the SLOs. We are working with OCA to do that this afternoon or tomorrow morning before the seminar.

One question I have gotten from many people is how much oil was released. There is a large rock filled moat around the transformers in the transformer yard. The moat is supposed to capture oil from the transformers if there is a leak. The moat did this, however some oil was ejected beyond the moat or may have been carried out by the deluge system water sprays or fire hose spray. The licensee is doing an oil inventory to try to determine a maximum amount that could have been released.

We are reviewing 0309 for potential reactive inspections. The most risk significant issue related to the transformer fire is the water that was found in the switchgear room. We are waiting to hear more about how

b-5b

and why that happened, and will get that information at 1400 tomorrow when the licensee will be prepared to present their preliminary results. The switchgear room is risk significant and a flood in that room could lead to an event as severe as a station blackout. We expect to be able to make a recommendation on a reactive inspection tomorrow or Wednesday.

VR,
TOM

From: Burritt, Arthur
Sent: Sunday, May 10, 2015 11:37 AM
To: Dorman, Dan; Lew, David; Screnci, Diane; Scott, Michael; Tifft, Doug
Cc: McNamara, Nancy; Sheehan, Neil; Setzer, Thomas; Stewart, Scott; Newman, Garrett; Nieh, Ho
Subject: RE: UPDATE 5/10 - Indian Point Plant Trip and UE due to a Main Transformer Failure

On 5/10 as of 10:30 am a resident inspector confirmed that the plant remains stable at normal operation temperature and pressure with decay heat removal to the main condenser. All safety systems are available including electrical power. The inspector also identified that grounds came in on two safety related battery chargers during the event. One ground was able to be reset and the other required the charger to be cycled to reset. The inspectors will follow-up on this issue.

Previous report updates:

- The 31 main transformer has a split opening in the top of the transformer not the side
- The actual amount of oil release may have been over estimated

Licensee Priorities:

- Inspect the adjacent redundant main transformer and unit auxiliary transformers for damage.
- Inspect transformer support systems for damage (isophase bus duct cooling, fire deluge piping, etc.)
- Continue to cleanup oil in the discharge canal and the river; a boat is on the river conducting cleanup operations
- Begin the cleanup of firefighting foam (the foam is bio-degradable)
- Complete the post trip review
- Begin a root cause investigation of the failure and event

Licensee next steps:

- Evaluating whether or not to go to cold shutdown
- Plan a transformer replacement outage, expected duration about 14 days based on the previous transformer failure replacement outage
- Entergy has a spare main transformer onsite but it will require modifications and supporting engineering reviews for use
- Entergy evaluated plant restart on the on the unaffected redundant main transformer, but determined that they will not proceed on this path since they would then have to replace the damaged transformer in close proximity and this would cause an unacceptable plant trip risk.

Other:

- The governor is expected onsite again today at 12:30 pm (apparently he only lives about 30 minutes from the site)
- A number of news trucks are at the old Unit 2 access and the main gate broadcasting live

NRC Next Steps:

- Complete post trip review
- Evaluate the cause of water backing up into the switchgear room
- Evaluate the cause and implications of the battery charger grounds
- Conduct an MC 0309 review

Next Update 5/11 through the normal meeting process

From: Burritt, Arthur

Sent: Saturday, May 09, 2015 11:24 PM

To: Dorman, Dan; Lew, David; Screnci, Diane; Scott, Michael; Tifft, Doug

Cc: McNamara, Nancy; Sheehan, Neil; Setzer, Thomas; Stewart, Scott; Newman, Garrett; Nieh, Ho

Subject: Indian Point Plant Trip and UE due to a Main Transformer Failure

On 5/9 at 5:50 pm Indian Point Unit 3 experience an automatic plant trip as a result of a main transformer failure and fire. Entergy declared an Unusual Event at 6:01 pm for an explosion in the protected area. The onsite fire brigade was dispatched and the fire was initially extinguished at 6:15 pm by the automatic deluge system. Offsite fire-fighting assistance was also requested and responded to the site checkpoint. Based on a report of water backing up into the 480 volt switchgear room through the floor drains the main transformer auto deluge system was secured. At 6:37 pm the fire re-flashed and the offsite fire company was brought onsite. The offsite fire company applied foam from a high angle and the fire was extinguished again at 8:05 pm.

The reactor trip was uncomplicated, all control rods inserted and systems responded as expected. All AFW pumps started as expected to restore S/G levels and the plant is removing decay heat to the main condenser via the steam dumps. The resident inspectors responded to the site and independently confirmed the plant is stable at normal operating temperature and pressure. They conducted an initial review of operator performance including interviewing the control room supervisor and shift manager. Operator appropriately implemented EOP and abnormal procedures and no concerns were identified. The inspectors also walkdown AFW and 480 volt switchgear to confirm systems are operating correctly and that the water in the switchgear room was removed. The Unusual Event was exited at 9:03 pm.

Unit 2 continues to operate at 100% power but did experience an electrical disturbance and one of two main output breakers opened. The output breaker was reclosed without issue.

Oil from 31 main transformer has spilled into the discharge canal and has made its way into the river. Plant personnel are sandbagging drains and release paths. Entergy has contacted its environmental contractor, who is expected onsite to assist with cleanup. State notifications were made concerning the oil. The initial report was several thousand gallons may have overflowed out of the transformer moat as a result of the auto deluge system water.

The NY Governor was onsite, inspected the transformer and then held a news conference in front of the site.

Next steps:

- A resident will be onsite tomorrow morning to get an updated status and continue with the post trip review
- At this point we have only one safety concern related to the water backing up into the 480 volt switchgear room

The next email update will be tomorrow early afternoon.

Siwy, Andrew

From: Burritt, Arthur
Sent: Friday, May 15, 2015 7:38 AM
To: Scott, Michael
Cc: Nieh, Ho
Subject: RE: UPDATE 5/10 - Indian Point Plant Trip and UE due to a Main Transformer Failure

I ensured the PAOs and SLOs were aware of my emails, and I also told people when we would update next. I talked with Diane several times over the weekend and corresponded with Nancy via email after each update. I did not have to text, but would have if I did not get an acknowledgement.

-----Original Message-----

From: Scott, Michael
Sent: Sunday, May 10, 2015 1:45 PM
To: Burritt, Arthur
Cc: Nieh, Ho
Subject: RE: UPDATE 5/10 - Indian Point Plant Trip and UE due to a Main Transformer Failure

Art:

Great update - thanks!

I assume that you followed the protocol on contacting the SLOs/PAOs by phone/text to let them know to check their e-mail. Especially important given the governor's return and obvious news interest. Please confirm.

Mike

From: Burritt, Arthur
Sent: Sunday, May 10, 2015 11:37 AM
To: Dorman, Dan; Lew, David; Scenci, Diane; Scott, Michael; Tiff, Doug
Cc: McNamara, Nancy; Sheehan, Neil; Setzer, Thomas; Stewart, Scott; Newman, Garrett; Nieh, Ho
Subject: RE: UPDATE 5/10 - Indian Point Plant Trip and UE due to a Main Transformer Failure

On 5/10 as of 10:30 am a resident inspector confirmed that the plant remains stable at normal operation temperature and pressure with decay heat removal to the main condenser. All safety systems are available including electrical power. The inspector also identified that grounds came in on two safety related battery chargers during the event. One ground was able to be reset and the other required the charger to be cycled to reset. The inspectors will follow-up on this issue.

Previous report updates:

- The 31 main transformer has a split opening in the top of the transformer not the side
- The actual amount of oil release may have been over estimated

Licensee Priorities:

- Inspect the adjacent redundant main transformer and unit auxiliary transformers for damage.
- Inspect transformer support systems for damage (isophase bus duct cooling, fire deluge piping, etc.)
- Continue to cleanup oil in the discharge canal and the river; a boat is on the river conducting cleanup operations

B5H

- Begin the cleanup of firefighting foam (the foam is bio-degradable)
- Complete the post trip review
- Begin a root cause investigation of the failure and event

Licensee next steps:

- Evaluating whether or not to go to cold shutdown
- Plan a transformer replacement outage, expected duration about 14 days based on the previous transformer failure replacement outage
- Entergy has a spare main transformer onsite but it will require modifications and supporting engineering reviews for use
- Entergy evaluated plant restart on the on the unaffected redundant main transformer, but determined that they will not proceed on this path since they would then have to replace the damaged transformer in close proximity and this would cause an unacceptable plant trip risk.

Other:

- The governor is expected onsite again today at 12:30 pm (apparently he only lives about 30 minutes from the site)
- A number of news trucks are at the old Unit 2 access and the main gate broadcasting live

NRC Next Steps:

- Complete post trip review
- Evaluate the cause of water backing up into the switchgear room
- Evaluate the cause and implications of the battery charger grounds
- Conduct an MC 0309 review

Next Update 5/11 through the normal meeting process

From: Burritt, Arthur

Sent: Saturday, May 09, 2015 11:24 PM

To: Dorman, Dan; Lew, David; Screnci, Diane; Scott, Michael; Tiff, Doug

Cc: McNamara, Nancy; Sheehan, Neil; Setzer, Thomas; Stewart, Scott; Newman, Garrett; Nieh, Ho

Subject: Indian Point Plant Trip and UE due to a Main Transformer Failure

On 5/9 at 5:50 pm Indian Point Unit 3 experience an automatic plant trip as a result of a main transformer failure and fire. Entergy declared an Unusual Event at 6:01 pm for an explosion in the protected area. The and the onsite fire brigade was dispatched and the fire was initially extinguished at 6:15 pm by the automatic deluge system. Offsite fire-fighting assistance was also requested and responded to the site checkpoint. Based on a report of water backing up into the 480 volt switchgear room through the floor drains the main transformer auto deluge system was secured. At 6:37 pm the fire re-flashed and the offsite fire company was brought onsite. The offsite fire company applied foam from a high angle and the fire was extinguished again at 8:05 pm.

The reactor trip was uncomplicated, all control rods inserted and systems responded as expected. All AFW pumps started as expected to restore S/G levels and the plant is removing decay heat to the main condenser via the steam dumps. The resident inspectors responded to the site and independently confirmed the plant is stable at normal operating temperature and pressure. They conducted an initial review of operator performance including interviewing the control room

supervisor and shift manager. Operator appropriately implemented EOP and abnormal procedures and no concerns were identified. The inspectors also walkdown AFW and 480 volt switchgear to confirm systems are operating correctly and that the water in the switchgear room was removed. The Unusual Event was exited at 9:03 pm.

Unit 2 continues to operate at 100% power but did experience an electrical disturbance and one of two main output breakers opened. The output breaker was reclosed without issue.

Oil from 31 main transformer has spilled into the discharge canal and has made its way into the river. Plant personnel are sandbagging drains and release paths. Entergy has contacted its environmental contractor, who is expected onsite at to assist with cleanup. State notifications were made concerning the oil. The initial report was several thousand gallons may have overflowed out of the transformer moat as a result of the auto deluge system water.

The NY Governor was onsite, inspected the transformer and then held a news conference in front of the site.

Next steps:

- A resident will be onsite tomorrow morning to get an updated status and continue with the post trip review
- At this point we have only one safety concern related to the water backing up into the 480 volt switchgear room

The next email update will be tomorrow early afternoon.

Schmidt, Wayne

From: Schmidt, Wayne
Sent: Monday, May 11, 2015 9:52 AM
To: 'Frank Arner'; Christopher.Cahill@nrc.gov
Subject: IP3 Switchgear internal flooding

Gets ugly quickly!

Bob

Official Use Only - S

Indian Point 3

Table 4.3.2 SDP Worksheet for Indian Point Nuc

<u>Safety Functions Needed:</u>		<u>Full Creditabl</u>	
Turbine-Driven AFW Pump (TDAFW)		1/1 TDP train	
Primary Depressurization (DEP)		Operator depr (operator actic	
RCP Seals (SEAL)		Early RCP sea	
Service Water Pump 38 is Available (SW38)		1/1 SW pump	
Align and Use Loads off MCC 312A for Shutdown (MCC312)		The operator a (operator actic	
CCW Pump 32 is Available (CCW32)		1/1 CCW pum	
Charging Makeup (CHG31/32)		1/2 charging p	
<u>Circle Affected Functions</u>		<u>IEL</u>	<u>Rema Each</u>
1 FDSB - MCC312 (2, 7) 5 + 2	7		
2 FDSB - SEAL (3, 9) 5 + 1	6		
3 FDSB - DEP - CHG31/32 (5) 5 + 1 + 3	9		
4 FDSB - DEP - CCW32 (6) 5 + 1 + 2	8		
5 FDSB - DEP - SW38 (8) 5 + 1 + 2	8		
6 FDSB - TDAFW (10) 5 + 1	6		

- 74 -

Rev. 1, Octo

Lally, Christopher

From: Paul <pmblanch@comcast.net>
Sent: Tuesday, May 12, 2015 3:36 PM
To: Screnci, Diane; Sheehan, Neil; Pickett, Douglas
Subject: Fwd: The real threat to Indian Point

FYI

FOR IMMEDIATE RELEASE

Media Contact: Susan Van Dolsen svandolsen@gmail.com 914-525-8886 www.sape2016.org

(Cortlandt, NY), May 11, 2015 A transformer fire at the Indian Point nuclear facility garnered wide coverage in the global media this weekend, including a visit to the site by Governor Cuomo, but throughout the coverage, there was no mention of Spectra Energy's proposed new 42 inch diameter high pressure natural gas pipeline which presents a dramatic new hazard to the troubled plant. For over a year, local, state, county and federal elected officials, as well as the public, have been outspoken in their calls for an independent risk assessment of the siting of a massive new gas pipeline within 105 feet of vital structures at the aging nuclear plant. Yet, both the Nuclear Regulatory Commission (NRC) and the Federal Energy Regulatory Commission (FERC) signed off on the project. The events this weekend dramatically demonstrate that a truly independent risk assessment must be undertaken immediately. Furthermore, FERC must rescind its approval of the Algonquin Incremental Market (AIM) project.

Rick Kuprewicz of Accufacts, a renowned pipeline expert, engaged by the Town of Cortlandt to evaluate the project's impacts on the plant, and Paul Blanch, a nuclear expert with over 45 years of nuclear safety experience, analyzed the Entergy hazard study that was confirmed by the NRC, and believe the analysis severely underestimate the risk of catastrophic failure at the plant in the event of a pipeline rupture. Mr. Kuprewicz said, "in the event of a pipeline rupture in this sensitive location, the system dynamics will substantially delay the recognition and appropriate shutoff and responses such that the gas will explode and burn for quite a period of time. "

Mr. Blanch submitted a formal petition to the NRC in October 2014 and was recently notified by the Petition Review Board that "the staff's overall conclusion is that both Indian Point units could safely shut down." Mr. Blanch strongly disagrees with this conclusion and stated, "The gas isolation valves designed to terminate gas flow and prevent core damage must be designed and operated in accordance with NRC's requirements specified within 10 CFR Part 50. The NRC is delegating its exclusive responsibility for nuclear safety requirements and enforcement to the DOT. The NRC position is

unacceptable, unprecedented and unparalleled in the history of commercial nuclear power." Mr. Blanch has requested a local venue for a final presentation to the Petition Review Board. A local meeting would be in compliance with NRC guidelines regarding public participation because it would enable all stakeholders, including Senators Schumer and Gillibrand, Governor Cuomo and the public, to attend this critically important presentation.

The 20 million residents living within the 50 mile radius of the Indian Point nuclear facility are keenly aware of the fact that the plant has been under scrutiny for many years and that there are many problems associated with its operation. For example, the NRC has ordered Entergy to do a full seismic study that will not be completed until June 2017. The introduction of a significant new risk from the new gas pipeline is unfathomable. As Governor Cuomo stated at the site on Sunday, "This plant is the nuclear plant that is closest to the most densely populated area on the globe. If something goes wrong here, it can go very wrong for a lot of people. So it's always been a priority for us."

Senators Schumer and Gillibrand, Governor Cuomo and all other leaders must fulfill their responsibility to protect the health and safety of the citizens of the region and must publicly insist that the NRC allow Mr. Blanch to present locally and that FERC rescind its approval of the AIM project immediately.
#####

Lally, Christopher

From: Linda Puglisi <lindap@townofcortlandt.com>
Sent: Tuesday, May 12, 2015 12:56 PM
To: Pickett, Douglas
Subject: Press Release - Indian Point
Attachments: SKM_C454e15051115060.pdf

Please read the attached.

Thank you,

Linda D. Puglisi
Town Supervisor

1 Heady Street
Cortlandt Manor, NY 10567
Lindap@townofcortlandt.com
(914) 734-1002 office
(914) 734-1003 fax
www.townofcortlandt.com

B-57



LINDA D. PUGLISI
Town Supervisor

TOWN OF CORTLANDT

OFFICE OF THE SUPERVISOR
TOWN HALL
1 HEADY STREET
CORTLANDT MANOR, NY 10567-1254
(914) 734-1002
FAX (914) 734-1003
www.townofcortlandt.com

Town Board Members
RICHARD H. BECKER
DEBRA A. COSTELLO
FRANCIS X. FARRELL
SETH M. FREACH

PRESS RELEASE INDIAN POINT'S TRANSFORMER EXPLOSION AND FIRE

(5/11/15)

FOR MORE INFORMATION

Linda D. Puglisi, Town of Cortlandt
(914) 734-1002, Fax (914) 734-1003

Saturday evening, May 9, 2015 I received a phone call from Entergy, Inc. representatives as I always do if there is a situation of any magnitude at Indian Point where two operating nuclear power plants are located in the Village of Buchanan, Town of Cortlandt.

I also immediately contacted the Mayor of Buchanan, Theresa Knickerbocker, our Town Board, our two police departments (N.Y. State and Westchester County) and the Town's fire inspector, to ensure that everyone was apprised and to find out more information in order to protect our community.

I was told that an explosion in one of the many transformers at the site took place followed by a fire in this same transformer. Therefore, significant black smoke, loud noise and an oil spill from the transformer resulted from this incident. I am receiving updates from all parties involved, including Entergy. Indian Point 3 is temporarily closed.

Thankfully, there were no injuries and the fire was put out by our volunteer fire departments and with Entergy's fire staff. Thanks to all of our emergency workers who arrived at the scene in minutes to keep our community safe.

I also was told that the nuclear plants or generators were not impacted by this explosion and fire.

This incident is yet another reason why the recently approved Spectra (AIM) natural gas line by the Federal Energy Regulatory Commission (FERC) should not be allowed to go forward, especially since it's been re-routed only a few hundred feet away from Indian Point and these nuclear plants. What if this explosion and fire had been in close proximity to this new expanded gas line, it could have been a disaster.

We have asked FERC to re-hear or revisit their decision on approving this enlarged gas line (from a 26" line to a 42" line and a 25% increase in pressure). Also, we opposed this expansion for the past two years.

NOW WE INSIST that FERC reverse their decision and does not allow for this expansion to proceed.

The nuclear plants, open, closed, relicensed or not, by the NRC will still have the radioactive spent fuel rods at this location in the dry cast storage units. Therefore, we cannot allow for this large expansion of the Spectra/Algonquin natural gas line to go close to Indian Point which could impact the safety of thousands of residents in our community.

Linda D. Puglisi
Town of Cortlandt Supervisor
and Town Board

5/11

Trapp, James

From: Setzer, Thomas
Sent: Tuesday, May 12, 2015 12:14 PM
To: Screnci, Diane; Sheehan, Neil
Cc: Stewart, Scott; Newman, Garrett; Lew, David; Nieh, Ho; Stewart, Scott; Burritt, Arthur; Trapp, James; Rogge, John; Tifft, Doug; Cahill, Christopher; Schmidt, Wayne
Subject: FW: IPEC Fires Since 1999
Attachments: IPEC Protected Area Fires since 1999.pdf

Hi Diane – you requested a list of fires at Indian Point yesterday. Here is what Entergy provided.

From: Dahl, George [mailto:gdahl@entergy.com]
Sent: Monday, May 11, 2015 2:58 PM
To: Setzer, Thomas
Cc: Coyle, Lawrence; Walpole, Robert W; Troy, Michael J; Elliott, Kevin P
Subject: IPEC Fires Since 1999

Tom,

Attached is a list of fires at IPEC since 1999 within the Protected Areas. The info was obtained from PCRS (which only contains CRs from 1999) using various keyword and trend code searches, and there could be some fire events that were not captured.

George Dahl
IPEC Regulatory Assurance
(914) 254-6676
gdahl@entergy.com
<><

IPEC Protected Area Fires since 1999

(PCRS search – may not be all-inclusive)

3/1/99	IP3: Class C fire on R2D2 motor – extinguished by chemist using CO2 extinguisher
9/22/99	IP3: Smoldering fire on 36' Turbine Building west of #@A MSR due to welding activities – extinguished by contractor
9/24/99	IP3: Fire on 36' Turbine Building from malfunctioning construction equipment
7/15/00	IP3: Band saw exhaust fan motor seized – fire extinguished with CO2 extinguisher
9/3/00	IP2: Fire in Containment due to welding activities igniting herculite
3/14/01	IP2: Cathodic Protection System rectifier A control transformer fire – extinguished with dry chemical extinguisher
9/7/01	IP3: Seized pump in Ecolochem water factory caused pump seal fire –extinguished by contractor
7/19/02	IP2: Station Auxiliary Transformer fire
8/17/02	IP1: Electrical cord fire in Chemical Systems Building
12/7/02	IP3: Fire due to oil soaked lagging on 32 Main Boiler Feed Pump – extinguished by brigade with extinguishers
3/11/03	IP2: Vehicle fire near the command post – extinguished by Security guards and a contractor using extinguishers
4/29/03	IP3: Fire at south end of HP Turbine due to turbine insulating pads soaked with lubricating oil
4/6/07	IP3: 31 Main Transformer fire
11/7/10	IP2: 21 Main Transformer fire
5/25/11	IP2: Diesel generator on the oil processing rig used for draining oil from 22 Main Transformer sparked and smoldered – extinguished with fire extinguisher
4/3/15	IP2: Electrical outlet fire in the MOB (Security facility) – extinguished by Security guards with fire extinguishers

Siwy, Andrew

From: Setzer, Thomas
Sent: Friday, May 15, 2015 10:13 AM
To: Stewart, Scott; Pinson, Brandon; Newman, Garrett; Burritt, Arthur; Dentel, Glenn
Subject: Fwd: Draft for Review - IMC 0309 Conditional Core Damage Estimationwls1.docx
Attachments: IMC 0309 Conditional Core Damage Estimationwls1.docx

ML15/38A 307

Thorough 0309 by wayne attached. Pls review and incorporate in 0309.

----- Original Message -----

From: "Schmidt, Wayne" <Wayne.Schmidt@nrc.gov>
Date: Fri, May 15, 2015 9:24 AM -0400
To: "Arner, Frank" <Frank.Arner@nrc.gov>, "Cahill, Christopher" <Christopher.Cahill@nrc.gov>, "Setzer, Thomas" <Thomas.Setzer@nrc.gov>
Subject: Draft for Review - IMC 0309 Conditional Core Damage Estimationwls1.docx

Please give it a read

659

From: Setzer, Thomas
To: Nieh, Ho; Dorman, Dan; Burritt, Arthur; Lamb, Christopher; Stewart, Scott; Newman, Garrett; Bolger, Allyce; Screnci, Diane; McNamara, Nancy; Milligan, Patricia; McHale, John; McCoppin, Michael; Tammara, Seshagiri; Noggle, James; Pickett, Douglas; Dudek, Michael; Pinkham, Laurie; Dacus, Eugene; Klukan, Brett; Weil, Jenny; Boska, John; Gilbertson, Anders; Rich, Sarah; Fuhrmeister, Roy; Barkley, Richard; MorganButler, Kimyata
Subject: "One Pagers" for Indian Point transformers, and Special Inspection Team
Date: Monday, May 18, 2015 3:30:21 PM
Attachments: 31_main transformer fire 5-9-15.docx
Indian Point Transformer Summary.docx
Importance: High

Good Afternoon-

I attached two "One Pagers" for your use. One notes the history of Indian Point transformer issues since 2007. The other gives an event summary, timeline, and key messages for the #31 transformer failure on May 9. We are launching a special inspection team (SIT) to investigate water that accumulated in the safety related Unit 3 switchgear room. This water is postulated to have come from the deluge system that was activated to extinguish the transformer fire. Our manual chapter 0309 risk assessment revealed that an SIT was warranted. The team will begin onsite inspection tomorrow with me as the team leader.

VR
TOM

B-60

Indian Point Transformer - Summary

Indian Point Unit 3 - #31 Main Transformer Explosion April 6, 2007

- Electrical fault in the 'B' phase high voltage bushing
- Fire from explosion extinguished in 10 minutes
- One finding for failure to enter into the CAP an adverse condition with the 'B' phase high voltage bushing on the 31 MT identified during testing.
 - Data from the test indicated a potential degradation of the bushing
 - IR 05000286/2007003

Indian Point Unit 2 - #21 Main Transformer Explosion November 7, 2010

- NRC evaluated Entergy's emergency response performance and confirmed Entergy staff implemented actions and made notifications in accordance with station procedures for an Alert declaration.
- Two findings documented in Unit 2 & Unit 3 IRs 2010005
 - Entergy staff did not adequately implement the requirements of the IPEC Emergency Plan. Specifically, on the evening of November 7, 2010, Unit 2 operators declared an Alert at 1849 hours. The technical support center (TSC) was staffed and declared operational at 2008 hours, and the operations support center (OSC) was staffed and declared operational at 2015 hours. Both of these activation times exceeded the 60-minute staffing requirement in the IPEC Emergency Plan.
 - Entergy Emergency plan implementing procedure did not meet the requirements of the IPEC Emergency Plan. Specifically, Entergy procedures allowed for a back-up notification process that did not comply with the requirements of the site emergency plan: the Emergency Plan requires that the Shift Manager or his designee notify the offsite authorities of an emergency declaration, while Form EP-4 directed the delegation of this responsibility to an offsite authority itself
- Entergy was fined by New York State \$1.2 million due to oil that spilled into the Hudson River following the transformer failure.

Indian Point Unit 3 – Unit Auxiliary Transformer February 29, 2012

- Removed UAT from service due to increased gassing
- Identified a "charred" A-phase movable contact (likely cause of the gassing)

Indian Point Unit 3 - #31 Main transformer failure, May 9, 2015

- SIT chartered on May 19, 2015, to investigate water accumulation in the Unit 3 safety related switchgear room.

Indian Point Unit 3
#31 Main Transformer Failure and Water Accumulation in Switchgear Room
May 9, 2015

Summary of Event:

On May 9, 2015, at 5:50 p.m., Indian Point Unit 3 experienced an automatic reactor trip as a result of a failure of the #31 main transformer. A Notification of Unusual Event (UE) was declared at 6:01 p.m. for an explosion or fire within the station's Protected Area. The fire was initially extinguished by the station's deluge system. The fire then reignited and was extinguished by both the site fire brigade and two offsite fire departments who responded to the event. The UE was exited at 9:02 p.m.

The reactor trip was uncomplicated. All control rods inserted into the reactor core, and all safety systems responded as designed. The NRC Resident Inspectors responded to the site and independently confirmed that the plant was in a stable, safe condition.

Water accumulation was noted in the safety-related switchgear room (reports ranged from 1" to 2"). This water is believed to have come from the fire protection deluge system and made its way into the switchgear room through a floor drain.

Resident Inspectors and region-based inspectors are providing oversight and performing follow-up inspections. A reactive inspection (Special Inspection Team) has been chartered and will begin inspecting on May 19, 2015.

Timeline

Saturday May 9, 2015

- 1750 Turbine trip, reactor trip, reports of a fire at #31 main transformer
- 1752 Unit 3 control room received alarms on the Fire Display Control Panel alerting operators that the transformer deluge and wall curtain fire suppression systems had activated.
- 1753 Fire at #31 transformer confirmed, deluge automatically activated, fire brigade responded
- 1801 Notification of Unusual Event (NOUE) declared per EAL HU2.2 "Report of Explosion in the Protected Area Resulting in Damage to Plant Equipment."
- 1808 Offsite agencies notified via NYS Radiological Emergency Communications System (RECS)
- 1815 Fire extinguished with hoses and foam, deluge system secured
- 1819 HOO notified by Entergy of emergency declaration
- 1837 Fire reflash, Entergy makes calls for offsite fire support (Verplanck, Montrose)
- 1849 Verplanck fire company responds
- 1915 Montrose fire company responds

- 1945 Entergy calls National Response Center as a result of oil spilled and making its way to the Hudson River
- 1953 Entergy calls Westchester DOH
- 1955 Entergy calls NY State DEC
- 2005 Fire extinguished
- 2100 Entergy calls its environmental cleanup contractor
- 2102 NOUE exited based on the fact that the fire is out and transformer indicates cooling is successful.
- 2135 Verplanck and Montrose fire companies depart site.

Key Messages

The reactor scram was uncomplicated. All safety systems responded as designed.

The event did not result in any dose to the public, or risk to public health and safety.

This event was evaluated using Management Directive 8.3, Inspection Manual Chapter 0309. This risk analysis performed as part of the evaluation revealed that the Conditional Core Damage Probability (CCDP) was from 4E-6 to 2E-5, which resides in the No Additional Inspection/SIT overlap and the SIT/AIT overlap regions. An SIT was selected due to the significant unexpected system interaction experienced between the non-safety-related fire protection deluge system and the safety-related electrical distribution system. Per procedure, the SIT Leader will assess the need to upgrade to an AIT once the onsite inspection commences. The SIT Team will begin onsite inspection on Tuesday May 19, 2015. The team will document the inspection results in a stand-alone report due out 45 days after the exit meeting.

The failure of Unit 3 #31 main transformer is the fourth transformer issue that has occurred since 2007:

- Indian Point Unit 3 - #31 Main Transformer Failure April 6, 2007
- Indian Point Unit 2 - #21 Main Transformer Failure November 7, 2010
- Indian Point Unit 3 – Unit Auxiliary Transformer (Gassing, charred 'A' phase movable contact found) February 29, 2012
- Indian Point Unit 3 - #31 Main transformer failure, May 9, 2015

The electrical equipment was not affected by the water during the May 9th event, and the plant was safely shut down. The plant remains out of service while work to install a replacement transformer is carried out.

Setzer, Thomas

From: Sheehan, Neil
Sent: Monday, May 11, 2015 3:28 PM
To: Setzer, Thomas
Subject: RE: UPDATE 5/11 - Indian Point Plant Trip and UE due to a Main Transformer Failure

Thanks, Tom!

From: Setzer, Thomas
Sent: Monday, May 11, 2015 3:22 PM
To: Sheehan, Neil
Subject: FW: UPDATE 5/11 - Indian Point Plant Trip and UE due to a Main Transformer Failure

Electronic version!

From: Newman, Garrett
Sent: Monday, May 11, 2015 3:22 PM
To: Setzer, Thomas
Subject: RE: UPDATE 5/11 - Indian Point Plant Trip and UE due to a Main Transformer Failure



From: Setzer, Thomas
Sent: Monday, May 11, 2015 2:50 PM
To: Burritt, Arthur; Dorman, Dan; Lew, David; Screnci, Diane; Scott, Michael; Tifft, Doug; McNamara, Nancy; Sheehan, Neil; Stewart, Scott; Newman, Garrett; Nieh, Ho

Subject: UPDATE 5/11 - Indian Point Plant Trip and UE due to a Main Transformer Failure

Importance: High

Good afternoon-

The plant has reached Mode 4, Hot Shutdown, and is in a stable, safe condition. The licensee has assembled teams to investigate the transformer failure, and estimates an outage of approximately 18 days.

I have just provided a PN to the admin staff to issue. It has been reviewed by PAO, SLO, licensee, Residents and Dave Lew. Thanks to everyone for your comments on the PN.

I have been on the phone with the IPEC Licensing Manager (Bob Walpole), as well as the EPA rep (Paul G.) for our region with the SLO, and I feel confident that we have communicated with both our internal and external stakeholders. I also provided some information to Kim Morganbutler, TA, who called to inquire about some basic information about the event.

I just learned that Geri Shapiro has requested a briefing through the SLOs. We are working with OCA to do that this afternoon or tomorrow morning before the seminar.

One question I have gotten from many people is how much oil was released. There is a large rock filled moat around the transformers in the transformer yard. The moat is supposed to capture oil from the transformers if there is a leak. The moat did this, however some oil was ejected beyond the moat or may have been carried out by the deluge system water sprays or fire hose spray. The licensee is doing an oil inventory to try to determine a maximum amount that could have been released.

We are reviewing 0309 for potential reactive inspections. The most risk significant issue related to the transformer fire is the water that was found in the switchgear room. We are waiting to hear more about how and why that happened, and will get that information at 1400 tomorrow when the licensee will be prepared to present their preliminary results. The switchgear room is risk significant and a flood in that room could lead to an event as severe as a station blackout. We expect to be able to make a recommendation on a reactive inspection tomorrow or Wednesday.

VR,
TOM

From: Burritt, Arthur

Sent: Sunday, May 10, 2015 11:37 AM

To: Dorman, Dan; Lew, David; Screnci, Diane; Scott, Michael; Tifft, Doug

Cc: McNamara, Nancy; Sheehan, Neil; Setzer, Thomas; Stewart, Scott; Newman, Garrett; Nieh, Ho

Subject: RE: UPDATE 5/10 - Indian Point Plant Trip and UE due to a Main Transformer Failure

On 5/10 as of 10:30 am a resident inspector confirmed that the plant remains stable at normal operation temperature and pressure with decay heat removal to the main condenser. All safety systems are available including electrical power. The inspector also identified that grounds came in on two safety related battery chargers during the event. One ground was able to be reset and the other required the charger to be cycled to reset. The inspectors will follow-up on this issue.

Previous report updates:

- The 31 main transformer has a split opening in the top of the transformer not the side
- The actual amount of oil release may have been over estimated

Licensee Priorities:

- Inspect the adjacent redundant main transformer and unit auxiliary transformers for damage.
- Inspect transformer support systems for damage (isophase bus duct cooling, fire deluge piping, etc.)

- Continue to cleanup oil in the discharge canal and the river; a boat is on the river conducting cleanup operations
- Begin the cleanup of firefighting foam (the foam is bio-degradable)
- Complete the post trip review
- Begin a root cause investigation of the failure and event

Licensee next steps:

- Evaluating whether or not to go to cold shutdown
- Plan a transformer replacement outage, expected duration about 14 days based on the previous transformer failure replacement outage
- Entergy has a spare main transformer onsite but it will require modifications and supporting engineering reviews for use
- Entergy evaluated plant restart on the on the unaffected redundant main transformer, but determined that they will not proceed on this path since they would then have to replace the damaged transformer in close proximity and this would cause an unacceptable plant trip risk.

Other:

- The governor is expected onsite again today at 12:30 pm (apparently he only lives about 30 minutes from the site)
- A number of news trucks are at the old Unit 2 access and the main gate broadcasting live

NRC Next Steps:

- Complete post trip review
- Evaluate the cause of water backing up into the switchgear room
- Evaluate the cause and implications of the battery charger grounds
- Conduct an MC 0309 review

Next Update 5/11 through the normal meeting process

From: Burritt, Arthur

Sent: Saturday, May 09, 2015 11:24 PM

To: Dorman, Dan; Lew, David; Scenci, Diane; Scott, Michael; Tifft, Doug

Cc: McNamara, Nancy; Sheehan, Neil; Setzer, Thomas; Stewart, Scott; Newman, Garrett; Nieh, Ho

Subject: Indian Point Plant Trip and UE due to a Main Transformer Failure

On 5/9 at 5:50 pm Indian Point Unit 3 experience an automatic plant trip as a result of a main transformer failure and fire. Entergy declared an Unusual Event at 6:01 pm for an explosion in the protected area. The onsite fire brigade was dispatched and the fire was initially extinguished at 6:15 pm by the automatic deluge system. Offsite fire-fighting assistance was also requested and responded to the site checkpoint. Based on a report of water backing up into the 480 volt switchgear room through the floor drains the main transformer auto deluge system was secured. At 6:37 pm the fire re-flashed and the offsite fire company was brought onsite. The offsite fire company applied foam from a high angle and the fire was extinguished again at 8:05 pm.

The reactor trip was uncomplicated, all control rods inserted and systems responded as expected. All AFW pumps started as expected to restore S/G levels and the plant is removing decay heat to the main condenser via the steam dumps. The resident inspectors responded to the site and independently confirmed the plant is stable at normal operating temperature and pressure. They conducted an initial review of operator performance including interviewing the control room supervisor and shift manager. Operator appropriately implemented EOP and abnormal procedures and no concerns were identified. The inspectors also walkdown AFW and 480 volt switchgear to confirm systems are operating correctly and that the water in the switchgear room was removed. The Unusual Event was exited at 9:03 pm.

Unit 2 continues to operate at 100% power but did experience an electrical disturbance and one of two main output breakers opened. The output breaker was reclosed without issue.

Oil from 31 main transformer has spilled into the discharge canal and has made its way into the river. Plant personnel are sandbagging drains and release paths. Entergy has contacted its environmental contractor, who is expected onsite at to assist with cleanup. State notifications were made concerning the oil. The initial report was several thousand gallons may have overflowed out of the transformer moat as a result of the auto deluge system water.

The NY Governor was onsite, inspected the transformer and then held a news conference in front of the site.

Next steps:

- A resident will be onsite tomorrow morning to get an updated status and continue with the post trip review
- At this point we have only one safety concern related to the water backing up into the 480 volt switchgear room

The next email update will be tomorrow early afternoon.

Schmidt, Wayne

From: Schmidt, Wayne
Sent: Monday, May 11, 2015 12:34 PM
To: Stewart, Scott
Subject: RE: IP 480 swgr water

From the floor drains up, sounds like the deluge water could have been flowing to the storm sewer and then the floor drain check valve not working .

From: Stewart, Scott
Sent: Monday, May 11, 2015 12:14 PM
To: Schmidt, Wayne
Subject: RE: IP 480 swgr water

Too soon to tell, maybe. The operators told us water was flowing up from the floor drain but we did not talk to the operator that made the initial report. Scott

From: Schmidt, Wayne
Sent: Monday, May 11, 2015 12:06 PM
To: Stewart, Scott; Setzer, Thomas
Cc: Burritt, Arthur; Pinson, Brandon; Newman, Garrett
Subject: RE: IP 480 swgr water

Sounds good. By open drain I'm assuming a mis-positioned valve?

From: Stewart, Scott
Sent: Monday, May 11, 2015 11:56 AM
To: Setzer, Thomas
Cc: Burritt, Arthur; Pinson, Brandon; Newman, Garrett; Schmidt, Wayne
Subject: IP 480 swgr water

The licensee is investigating the water intrusion into the 480 swgr and want to present to me their preliminary result at 1400 Tuesday. I agreed. Apparently they found an open drain valve on the deluge header that is in the room. They will also present their assessment of the risk impact of the water. Bob Walpole told me they had been communicating with Wayne Schmidt. FYI, Scott

Bob

Siwy, Andrew

From: Setzer, Thomas
Sent: Monday, May 11, 2015 10:05 AM
To: Screnci, Diane; Sheehan, Neil; McNamara, Nancy
Cc: Burritt, Arthur
Subject: Amount of transformer oil in Hudson River

Hi all –

Just a quick note since you have given me essentially the same concern, and that is how much oil got into the Hudson for the #31 main transformer at Indian Point 3. At this point, we do not have a total amount. We have gotten widely varying amounts from tens to hundreds to thousands of gallons, but none of the totals have been substantiated/verified yet. When we get credible amounts, I will pass that along. The licensee is still determining this.

TOM

b-6b

Siwy, Andrew

From: Burritt, Arthur
Sent: Tuesday, May 12, 2015 11:59 AM
To: Jackson, Donald
Subject: RE: IP3

Just when I am going on leave all the interesting stuff starts to happen

-----Original Message-----

From: Jackson, Donald
Sent: Monday, May 11, 2015 5:45 PM
To: Burritt, Arthur
Subject: IP3

Art,

The residents walked me around the IP3 transformer today...what a mess. Plant is pretty broken, must have been a big fire. Bladder tank was thrown up on the isophase, and burning oil went over the barrier and on to the OK Main Xfmr. Some other smaller nearby Xfmr is scorched too. Water apparently ended up in the 480V switchgear room....they gotta figure that out and correct it. My exam is going fine, but what a mess!

Don Jackson Sent Via Blackberry

11 5

Siwy, Andrew

From: Stewart, Scott
Sent: Wednesday, May 13, 2015 11:52 AM
To: Burritt, Arthur
Cc: Newman, Garrett; Schmidt, Wayne; Setzer, Thomas; Schoppy, Joseph
Subject: RE: yet another recent mod on 31 MPT

In my opinion at this time, there was no obvious oversight in the licensee's management of 31 main transformer. There may have been something subtle as Joe mentions below, but there were no reported issues since startup, operators I talked to said there were no concerns being discussed, no higher level CRs, no engineering focus activities. There was nothing in the equipment reliability report where open issues are tracked and the 31 MT was not being tracked by the system health or plant issues list. The transformer had Severon unit(s) that could provide gas levels at the time of the failure, if they survived the fire. The licensee had reported gassing, but noted no unusual or high levels of gassing and no precursor levels that would indicate imminent failure. I understand they had been working with the vendor for some time. There was some outage work and inspections, I do not know the completion status. At this point, I plan to let the licensee root cause determine what happened. Thoughts, suggestions are welcome.

Oil update: it seems about 10% of the oil will be recovered. The licensee has contracted an estimate of the amount burned.

Scott

-----Original Message-----

From: Schoppy, Joseph
Sent: Wednesday, May 13, 2015 9:53 AM
To: Stewart, Scott
Cc: Newman, Garrett; Schmidt, Wayne; Setzer, Thomas
Subject: yet another recent mod on 31 MPT

Oops... forgot to send this one last night.

.....

Scott,

While reviewing the recent mod listing for CDBI sample selection, I noted the attached mod (56268, dated 4/15/15, replace cooling fan assemblies & motor starters on 31 MPT). Perhaps mod not installed properly and/or not a good fit for application. Just sharing.

McKenzie, Kieta

From: Setzer, Thomas
Sent: Thursday, May 14, 2015 9:50 AM
To: Schmidt, Wayne; Burritt, Arthur; Dorman, Dan; Lew, David; Screnci, Diane; Scott, Michael; Tiff, Doug; McNamara, Nancy; Sheehan, Neil; Stewart, Scott; Newman, Garrett; Nieh, Ho; Trapp, James; Cahill, Christopher; Cook, William; Arner, Frank
Subject: RE: UPDATE 5/12 - Indian Point Plant Trip and UE due to a Main Transformer Failure

Wayne – Ho is not comfortable with Friday being the timeframe for the 0309 information. He wants to finalize the 0309 today. I spoke to the licensee (Bob Walpole) and they will give you the information by 2pm today.

From: Schmidt, Wayne
Sent: Wednesday, May 13, 2015 4:38 PM
To: Setzer, Thomas; Burritt, Arthur; Dorman, Dan; Lew, David; Screnci, Diane; Scott, Michael; Tiff, Doug; McNamara, Nancy; Sheehan, Neil; Stewart, Scott; Newman, Garrett; Nieh, Ho; Trapp, James; Cahill, Christopher; Cook, William; Arner, Frank
Subject: RE: UPDATE 5/12 - Indian Point Plant Trip and UE due to a Main Transformer Failure

Just a quick update on the review so far.

From the actual plant transient the conditional core damage probability (CCDP) would be in the mid E-7 range.

However, we need to evaluate if the event was more significant given that water got into the switchgear room. The switchgear room at IP3 houses all the safety related busses and could be impacted at about 4-5 inches of water. If these busses are lost, offsite power and the EDGs are not usable, so the alternate safety shutdown panel and the Appendix R EDG is used. We generally assumed that the overall chance of core damage for alternate safe shutdown is in the mid E-2 range

I asked the licensee (Bob Walpole), if there was no operator action taken to isolate the deluge, based on a reasonable hydraulic analysis, would the switchgear room have flooded to a point that an SBO would have happened.

- If the answer is No – then there is no risk to this issue and the mid-E-7 stands.
- If the answer is Yes – then we need to look at a human action failure probability – even with an optimistic 1 in 10,000 chance of failure or 1E-4, given the mid E-2 CCDP for alternate shutdown the CCDP would be in the mid E-6 range.

The licensee will try to have an answer by Friday.

Background:

Given the actuation of the four transformer yard deluge valves, there was a resultant water buildup in the yard area, which is at plant grade of 18 ft. Initial estimate was 4,300 gpm total deluge flow. This yard area has yard drains that pass through piping and several connecting manholes before draining to the discharge channel. Initial estimated capacity was 3,000 gpm. So as observed, water was at or slightly above the 18 ft, while the deluge was ongoing after the 80,000 gal moat filled up..

There was also about 1-2 inches of water found in the adjacent safety related switchgear room at 15 ft elevation.

The switchgears room floor drains interact with the yard drain system. Such that if the water level in the yard drain system is less than 15 ft any water in the switchgear room would flow to the discharge channel; but

conversely if the yard drain level was above 15 ft water would flow into the switchgear room. There are no back flow valve at IP3 (but there are at IP2).

As a further complication the deluge control valves are in a small room within the switchgear room, the deluge valves are actuated by energizing a solenoid valve that ports fire water off and opens the deluge valve, the solenoid remains energized and continues to drain fire water to the deluge valve room floor drain, which is connected to the overall switchgear room drains.

In this case the fire brigade leader identified the water in the switchgear room and ordered the deluge to be stopped (completed in about 25 minutes), which stopped the addition for the 4300 gpm to the yard and then isolated the fire water supply to the deluge valves (completed about 4 minutes later) to stop the solenoid valve flow to the switchgear room. Within about 20 -30 minutes there was no longer any water in the switchgear room.

The only other drain path from the switchgear room is through the gap in the door leading to the EDG rooms. The EDG rooms have a sump capacity that is much greater than the floor drains because of service water piping located in the rooms.

From: Setzer, Thomas

Sent: Wednesday, May 13, 2015 1:56 PM

To: Burritt, Arthur; Dorman, Dan; Lew, David; Screnci, Diane; Scott, Michael; Tift, Doug; McNamara, Nancy; Sheehan, Neil; Stewart, Scott; Newman, Garrett; Nieh, Ho; Schmidt, Wayne; Trapp, James

Subject: UPDATE 5/12 - Indian Point Plant Trip and UE due to a Main Transformer Failure

Good afternoon-

The plant remains in a stable condition. Entergy continues to investigate the transformer failure. No cause has been identified yet.

We have completed many briefings to date. We are performing an 0309 for potential reactive inspections and are currently completing the risk analysis. Thus far, the 0309 indicates that a reactive inspection will not be warranted. The licensee has identified a deluge system valve as the source of the water that entered the switchgear room. This valve ports water to a floor drain in a room adjacent to the switchgear room when the deluge system activates. This water found its way up through a hub drain in the switchgear room. The water drained from the room once the deluge system was secured.

We have completed the takeaway items from the congressional staff briefing and the briefing with DOJ. We are responding to media and public inquiries as they come in.

VR,
TOM

From: Burritt, Arthur

Sent: Sunday, May 10, 2015 11:37 AM

To: Dorman, Dan; Lew, David; Screnci, Diane; Scott, Michael; Tift, Doug

Cc: McNamara, Nancy; Sheehan, Neil; Setzer, Thomas; Stewart, Scott; Newman, Garrett; Nieh, Ho

Subject: RE: UPDATE 5/10 - Indian Point Plant Trip and UE due to a Main Transformer Failure

On 5/10 as of 10:30 am a resident inspector confirmed that the plant remains stable at normal operation temperature and pressure with decay heat removal to the main condenser. All safety systems are available including electrical power. The inspector also identified that grounds came in on two safety related battery chargers during the event. One ground was able to be reset and the other required the charger to be cycled to reset. The inspectors will follow-up on this issue.

Previous report updates:

- The 31 main transformer has a split opening in the top of the transformer not the side
- The actual amount of oil release may have been over estimated

Licensee Priorities:

- Inspect the adjacent redundant main transformer and unit auxiliary transformers for damage.
- Inspect transformer support systems for damage (isophase bus duct cooling, fire deluge piping, etc.)
- Continue to cleanup oil in the discharge canal and the river; a boat is on the river conducting cleanup operations
- Begin the cleanup of firefighting foam (the foam is bio-degradable)
- Complete the post trip review
- Begin a root cause investigation of the failure and event

Licensee next steps:

- Evaluating whether or not to go to cold shutdown
- Plan a transformer replacement outage, expected duration about 14 days based on the previous transformer failure replacement outage
- Entergy has a spare main transformer onsite but it will require modifications and supporting engineering reviews for use
- Entergy evaluated plant restart on the on the unaffected redundant main transformer, but determined that they will not proceed on this path since they would then have to replace the damaged transformer in close proximity and this would cause an unacceptable plant trip risk.

Other:

- The governor is expected onsite again today at 12:30 pm (apparently he only lives about 30 minutes from the site)
- A number of news trucks are at the old Unit 2 access and the main gate broadcasting live

NRC Next Steps:

- Complete post trip review
- Evaluate the cause of water backing up into the switchgear room
- Evaluate the cause and implications of the battery charger grounds
- Conduct an MC 0309 review

Next Update 5/11 through the normal meeting process

From: Burritt, Arthur

Sent: Saturday, May 09, 2015 11:24 PM

To: Dorman, Dan; Lew, David; Screnci, Diane; Scott, Michael; Tiff, Doug

Cc: McNamara, Nancy; Sheehan, Neil; Setzer, Thomas; Stewart, Scott; Newman, Garrett; Nieh, Ho

Subject: Indian Point Plant Trip and UE due to a Main Transformer Failure

On 5/9 at 5:50 pm Indian Point Unit 3 experience an automatic plant trip as a result of a main transformer failure and fire. Entergy declared an Unusual Event at 6:01 pm for an explosion in the protected area. The and the onsite fire brigade was dispatched and the fire was initially extinguished at 6:15 pm by the automatic deluge system. Offsite fire-fighting assistance was also requested and responded to the site checkpoint. Based on a report of water backing up into the 480 volt switchgear room through the floor drains the main transformer auto deluge system was secured. At 6:37 pm the fire re-flashed and the offsite fire company was brought onsite. The offsite fire company applied foam from a high angle and the fire was extinguished again at 8:05 pm.

The reactor trip was uncomplicated, all control rods inserted and systems responded as expected. All AFW pumps started as expected to restore S/G levels and the plant is removing decay heat to the main condenser via the steam dumps. The resident inspectors responded to the site and independently confirmed the plant is

stable at normal operating temperature and pressure. They conducted an initial review of operator performance including interviewing the control room supervisor and shift manager. Operator appropriately implemented EOP and abnormal procedures and no concerns were identified. The inspectors also walkdown AFW and 480 volt switchgear to confirm systems are operating correctly and that the water in the switchgear room was removed. The Unusual Event was exited at 9:03 pm.

Unit 2 continues to operate at 100% power but did experience an electrical disturbance and one of two main output breakers opened. The output breaker was reclosed without issue.

Oil from 31 main transformer has spilled into the discharge canal and has made its way into the river. Plant personnel are sandbagging drains and release paths. Entergy has contacted its environmental contractor, who is expected onsite at to assist with cleanup. State notifications were made concerning the oil. The initial report was several thousand gallons may have overflowed out of the transformer moat as a result of the auto deluge system water.

The NY Governor was onsite, inspected the transformer and then held a news conference in front of the site.

Next steps:

- A resident will be onsite tomorrow morning to get an updated status and continue with the post trip review
- At this point we have only one safety concern related to the water backing up into the 480 volt switchgear room

The next email update will be tomorrow early afternoon.

7

McNamara, Nancy

From: Dorman, Dan
Sent: Thursday, May 14, 2015 5:39 PM
To: Johnson, Michael
Cc: Tracy, Glenn; Holian, Brian; Dean, Bill; MorganButler, Kimyata; Nieh, Ho; Screnci, Diane; Sheehan, Neil; Tifft, Doug; McNamara, Nancy
Subject: RE: SIT for Indian Point 3

Sorry, misfired ... completed message below

From: Dorman, Dan
Sent: Thursday, May 14, 2015 5:35 PM
To: Johnson, Michael
Cc: Tracy, Glenn; Holian, Brian; Dean, Bill; MorganButler, Kimyata; Nieh, Ho; Screnci, Diane; Sheehan, Neil; Tifft, Doug; McNamara, Nancy
Subject: SIT for Indian Point 3

Mike (and actors),

As part of our ongoing resident inspector review of the transformer explosion at Indian Point Unit 3 last Saturday, we have been focused on an accumulation of water in the Unit 3 switchgear room while the deluge system was operating during the first 25 minutes of the event. The switchgear room contains both trains of switchgear and excess flooding could put the plant in a station blackout. The 0309 assessment put the risk in the overlap range between resident follow-up and Special Inspection Team. The licensee has postulated the source of water as the deluge valve actuators which continue to bleed water off the deluge line following actuation. There is also indication that the deluge capacity overwhelms the site drainage to the discharge canal, potentially causing backup to the switchgear room. Region I has concluded that a Special inspection Team is appropriate to independently verify the source of flooding and to ensure a full understanding of the sequence of events and the licensee's performance in identifying and terminating the flooding.

We are developing a team and charter and expect them to be onsite by the middle of next week. We will be developing appropriate press release and stakeholder outreach plans in the next few days.

Dan

From: Fuhrmeister, Roy
To: Dentel, Glenn
Cc: Rogge, John
Subject: IP3 Transformer
Date: Friday, May 15, 2015 12:41:31 PM

Glenn,

Here are some brief notes regarding the deluge system and retention basin. I added a brief note on the constituents of transformer oil as well.

NRC's Fire protection Requirements:

Were established in Branch Technical Position (BTP) APCS 9.5-1 in the mid-1970s following the Brown's Ferry Unit 1 fire

Requirements for plants already licensed were laid out in Appendix A to the BTP

Appendix R to 10CFR50 was a generic backfit through rulemaking for certain issues which were being resisted by some licensees

NRC's fire protection requirements establish "defense in depth" for fire protection, to wit:

Prevent fire from starting,

Rapidly detect, control, and promptly extinguish any fires which do occur, and

Protect systems, structures and components important to safety so that any fire which is not promptly extinguished does not prevent safe shutdown of the unit

A deluge system on a large transformer is intended to protect the asset, and therefore is not required by NRC's fire protection rules (usually required by insurance companies)

Fixed systems for fire protection by water spray are governed by NFPA 15, "Water Spray Fixed Systems for Fire Protection" (transformers are one item specifically noted in the foreward as commonly protected in this manner)

Transformers are covered by section 4-4.3.4 which describes required coverage and water flow rates Section 4-6.2 requires for provision to be made to promptly and effectively dispose of all liquids from the fire area during operation of all systems in the fire area, typically by grading, diking, trenching, or underground or enclosed drains. Reference is made to NFPA 30, "Flammable and Combustible Liquids Code" for methods of drainage and diking.

Some guidance is provided in Appendix A to the standard for constructing dikes, Appendix A is not a mandatory requirement, and is provided for information purposes only. Appendix A does include separators for the drainage system to remove water insoluble liquids to prevent them entering public waterways.

NFPA 30 refers to NFPA 15, Appendix A for information on emergency drainage systems

Transformer oil is a highly refined light mineral oil. It is very similar to baby oil without the added fragrance.

The response of the deluge system was appropriate in that it put out the fire. The use of fire fighting foam was appropriate for reflash protection as the transformer windings are normally mounted on wooden supports. These supports tend to get saturated with transformer oil

[Handwritten signature]

Siwy, Andrew

From: Stewart, Scott
Sent: Friday, May 15, 2015 7:57 AM
To: Setzer, Thomas; Pinson, Brandon
Cc: Newman, Garrett; Schussler, Jason; Burritt, Arthur
Subject: IP status May 15

Unit 2 100% G, (.02) Risk will be yellow if planned undervoltage testing is performed.

Unit 3, Mode 4, (.08*) 226 degrees F, 356 psi, All Green Transformer replacement in progress, expected restart is May 27.

*No indication of leakage.

Scott has weekend calls.

1009
B-69

Schmidt, Wayne

From: Schmidt, Wayne
Sent: Friday, May 15, 2015 7:13 AM
To: Trapp, James
Subject: RE: Indian Point 3 SIT - Action Requested

Good Morning – I'm working on the Analysis now. I think it will be covered by CCDP band between mid E-6 and mid E-5.

To me it would be best to have this be a DRS lead inspection, consisting of people with: dynamic hydraulic analysis and fire protection – brigade response, deluge valves and alternate safe shutdown, experience. I would also recommend adding a third person as a training opportunity.

From: Trapp, James
Sent: Friday, May 15, 2015 7:07 AM
To: Jackson, Donald; Krohn, Paul; Rogge, John; Gray, Mel; Dimitriadis, Anthony; Noggle, James; Arner, Frank; Schmidt, Wayne; Cook, William; Cahill, Christopher
Cc: Lorson, Raymond
Subject: Indian Point 3 SIT - Action Requested
Importance: High

Please check schedules and see if we have inspector availability to support this team scheduled for departure next week. Thank you.

From: Nieh, Ho
Sent: Thursday, May 14, 2015 6:06 PM
To: Lorson, Raymond; Trapp, James
Cc: Scott, Michael
Subject: IP3 SIT
Importance: High

Ray, Jim – we briefed Dan Dorman and aligned on launching an SIT next week. Safety concern is fire water in-leakage to 480-volt safety switchgear room.

0309 evaluation met the unexpected system interaction criteria and the risk estimate was in the no-inspection/SIT overlap range. Wayne Schmidt did an awesome job supporting this.

Mike and I think that this effort should have a team manager, and that the best way to identify one would be to ask the DRP/DRS BCs to identify a team manager tomorrow.

That team manager would then solicit for support ... looking for folks with fire protection and piping system hydraulics expertise. Envision a team of 2 or 3 persons.

Press release being developed for Monday.

Planning for team onsite either Tuesday or Wednesday.

We're getting the ball rolling on drafting a charter.

Ho Nieh
Director, Division of Reactor Projects

b-770

Fuhrmeister, Roy

From: Rogge, John
Sent: Friday, May 15, 2015 10:37 AM
To: Fuhrmeister, Roy
Subject: FW: Indian Point 3 SIT - Action Requested

Importance: High

Are you up for this one too. Is CC done.

From: Trapp, James
Sent: Friday, May 15, 2015 7:07 AM
To: Jackson, Donald; Krohn, Paul; Rogge, John; Gray, Mel; Dimitriadis, Anthony; Noggle, James; Arner, Frank; Schmidt, Wayne; Cook, William; Cahill, Christopher
Cc: Lorson, Raymond
Subject: Indian Point 3 SIT - Action Requested
Importance: High

Please check schedules and see if we have inspector availability to support this team scheduled for departure next week. Thank you.

From: Nieh, Ho
Sent: Thursday, May 14, 2015 6:06 PM
To: Lorson, Raymond; Trapp, James
Cc: Scott, Michael
Subject: IP3 SIT
Importance: High

Ray, Jim – we briefed Dan Dorman and aligned on launching an SIT next week. Safety concern is fire water in-leakage to 480-volt safety switchgear room.

0309 evaluation met the unexpected system interaction criteria and the risk estimate was in the no-inspection/SIT overlap range. Wayne Schmidt did an awesome job supporting this.

Mike and I think that this effort should have a team manager, and that the best way to identify one would be to ask the DRP/DRS BCs to identify a team manager tomorrow.

That team manager would then solicit for support ... looking for folks with fire protection and piping system hydraulics expertise. Envision a team of 2 or 3 persons.

Press release being developed for Monday.

Planning for team onsite either Tuesday or Wednesday.

We're getting the ball rolling on drafting a charter.

Ho Nieh
Director, Division of Reactor Projects
U.S. Nuclear Regulatory Commission Region 1
2100 Renaissance Boulevard, Suite 100

131

Siwy, Andrew

From: Cabbage, Amy
Sent: Friday, May 15, 2015 9:38 AM
To: Nieh, Ho
Cc: Santos, Cayetano; Scott, Michael
Subject: RE: SIT for Indian Point 3

FYI - I just spoke to Mike Scott and got the info I needed. thanks

From: Cabbage, Amy
Sent: Friday, May 15, 2015 9:20 AM
To: Nieh, Ho
Cc: Santos, Cayetano
Subject: RE: SIT for Indian Point 3

Ho – The Commissioner wanted to know if the region be looking at reliability issues from the perspective of the number of transformer failures in the past several years (four in the last 8 years is the number I heard).

From: Santos, Cayetano
Sent: Friday, May 15, 2015 9:11 AM
To: Gilles, Nanette; Castleman, Patrick; Cabbage, Amy; Krsek, Robert
Cc: Galloway, Melanie; Pham, Bo; MorganButler, Kimyata
Subject: FW: SIT for Indian Point 3

All,

We just wanted to let you know that the staff is planning a Special Inspection at Indian Point 3 because of water accumulation in the switchgear room that occurred as a result of the transformer fire. See email below from Dan Dorman.

Tanny

From: Dorman, Dan
Sent: Thursday, May 14, 2015 5:35 PM
To: Johnson, Michael
Cc: Tracy, Glenn; Holian, Brian; Dean, Bill; MorganButler, Kimyata; Nieh, Ho; Screnci, Diane; Sheehan, Neil; Tift, Doug; McNamara, Nancy
Subject: SIT for Indian Point 3

Mike (and actors),

As part of our ongoing resident inspector review of the transformer explosion at Indian Point Unit 3 last Saturday, we have been focused on an accumulation of water in the Unit 3 switchgear room while the deluge system was operating during the first 25 minutes of the event. The switchgear room contains both trains of switchgear and excess flooding could put the plant in a station blackout. The 0309 assessment put the risk in the overlap range between resident follow-up and Special Inspection Team. The licensee has postulated the source of water as the deluge valve actuators which continue to bleed water off the deluge line following actuation. There is also indication that the deluge capacity overwhelms the site drainage to the discharge canal, potentially causing backup to the switchgear room. Region I has concluded that a Special inspection Team is appropriate to independently verify the source of flooding and to ensure a full understanding of the sequence of events and the licensee's performance in identifying and terminating the flooding.

BM

We are developing a team and charter and expect them to be onsite by the middle of next week. We will be developing appropriate press release and stakeholder outreach plans in the next few days.

Dan

14/

Siwy, Andrew

From: Burritt, Arthur
Sent: Tuesday, May 26, 2015 3:09 PM
To: Bolger, Allyce
Subject: RE: IP3 Startup Update

Nice job finding the explanation, thanks

From: Bolger, Allyce
Sent: Tuesday, May 26, 2015 12:26 PM
To: Burritt, Arthur
Cc: Stewart, Scott; Setzer, Thomas; Pinson, Brandon; Schussler, Jason; Newman, Garrett
Subject: RE: IP3 Startup Update

In the plant's system description for the condensate system I found the following paragraph which describes the backfiring and overheating of the SJAE:

Air ejectors are venturi shaped pipes (flared ends, constricted middles). An air suction line taps into the pipe upstream of the constriction or nozzle. Steam at a controlled pressure enters one end of the pipe. As the area of the pipe decreases in the nozzle, the velocity increases. The increasing steam velocity through the nozzle creates a low pressure area near the air suction line drawing the air into the nozzle. An ejector operating inefficiently may exhibit backfiring (steam flow through the air suction line). This condition is characterized by an air suction line as hot or hotter than its exhaust line.

Allyce

From: Bolger, Allyce
Sent: Monday, May 25, 2015 12:22 PM
To: Burritt, Arthur
Cc: Stewart, Scott; Setzer, Thomas; Pinson, Brandon; Schussler, Jason; Newman, Garrett
Subject: RE: IP3 Startup Update

Unit 3 is in Mode 2 3% power. Risk is Green.

Critical: 0413
POAH: 0431

Upcoming Milestones:
Test of the transformer yard deluge system ~1230-1300
Sync to the grid 1600-1700
100% Rx power 1000 5/26

Item of interest – At 0928 Unit 3 entered AOP-VAC-001 for condenser vacuum below 26" (gradually dropped to approximately 25.7"). The cause of the drop in vacuum was due to SJAE airlines backfiring due to overheating. Standby airlines were placed inservice while the overheated airlines were put in standby to cool down. The AOP was exited at 1147 when condenser vacuum had reached 26.8" with a steady trend upward.

From: Newman, Garrett
Sent: Sunday, May 24, 2015 6:11 PM

To: Burritt, Arthur

Cc: Bolger, Allyce; Stewart, Scott; Setzer, Thomas; Pinson, Brandon; Schussler, Jason

Subject: IP3 Startup Update

Unit 3 is in Mode 3 at NOP and no load Tave. Risk is currently Green.

It appears they've underestimated the I&C testing needed on the transformer and reactor startup has been pushed until ~2am.

480V switchgear room flooding issues:

- The floor drains in the Control Building would be cleared of any blockage (requires Coast Guard coordination/approval); In Progress
- The storm drain system that connects to the Control Building would be inspected to verify a clear path to the discharge canal (requires Coast Guard coordination/approval); Inspections in Progress; Special Log in Place
- The storm drains system that connects to the Diesel room (alternate drain path used as a comp measure) would be inspected to verify a clear path to the discharge canal. Reported complete sat; there should be a video

One item of interest today – While replacing a degraded cell on 31 battery today with the 31 battery charger directly powering the 31 instrument bus through the 31 static inverter (high Yellow risk), the DC bus experienced oscillations and flickering was seen on the control room alarm cans. The static inverter was swapped to its alternate power supply (an MCC through a constant voltage transformer). This placed the unit in an unplanned Orange risk configuration (low Orange). The cell was replaced successfully and the static inverter was swapped to its normal supply (battery charger and battery) within an hour and risk returned to Green. There was no other risk significant work in progress; they had to make notifications to corporate. We will follow-up this week to make sure appropriate actions were taken and TS were complied with. Initially, it appears they complied with TS required actions but may have missed one additional entry in the unofficial logs which had the same required actions.

Allyce will be in tomorrow morning to observe some startup activities.

5/19 reviews (right)

- Fire fighting went really well
- Lots of FBMs because of turnover
- Feel that would be able to spare person to watch S/G rooms.
- 480V SG was passage way to get to the scene of the fire so many went through there.
- All agreed keeping water from SG was most important.
- Only one involved in deluge^{test}, was not aware of leakage
- SM was surprised to hear of water in 480V room
- Water from deluge sprays stopped really quickly after request given to isolate
- = SM wanted to know about SIT, why here

People

Steve Radomski, FBL

Johanna Bridges, NPO

George Grimes, NPO

Andrew Zastrow, SM

Joe Johnson, qualified FBL

B-M

~~Someone~~

Documents

- + IP3 - 10895
- + Surveillance records on floor drain testing (NO packing)
- Troubleshooting results on deluge solenoids
- + Design change to seismically support FP piping

9321-F-40633-10 Tub + Con Building
Floor + Hub Drain EL 15th

9321-LL-30420-18 Schematic Diagram Fire Protection
Water System Main Unit Area Station
Area Transoms Rev 10

People

- + Someone who has done deluge testing
in lieu of NPOs on shift during event

- Doc comp documents, drawings, people
- Write up narrative for charter
- Take a cut at causes?

$$113 \times 27 \times 43 = 1017 \text{ ft}^3 \approx 7608 \text{ gal}$$

$$7608 \text{ gal} / 83 \text{ gpm} = 92 \text{ min}$$

Steve Radonski - Fire Brigade Leader

Steve Zippo → C team

x5501 - U2 CRS

x5298 - FBL

- Introduce self, explain an SIT, future resident

- You were FB leader for ~~the~~ fire, correct?
 Judge still going with plan

- What are your first steps in response to the fire?
 10-15 FBL

- When do you switch over to foam? → knew water was bad

- When do you search adjoining areas for fire? → searched when heard about source in S/O.

- Did you direct someone to turn off deluge?
 - Before or after water discovered? → yes after they reported water in

Lots of people going through it because it only went south side of transfer.

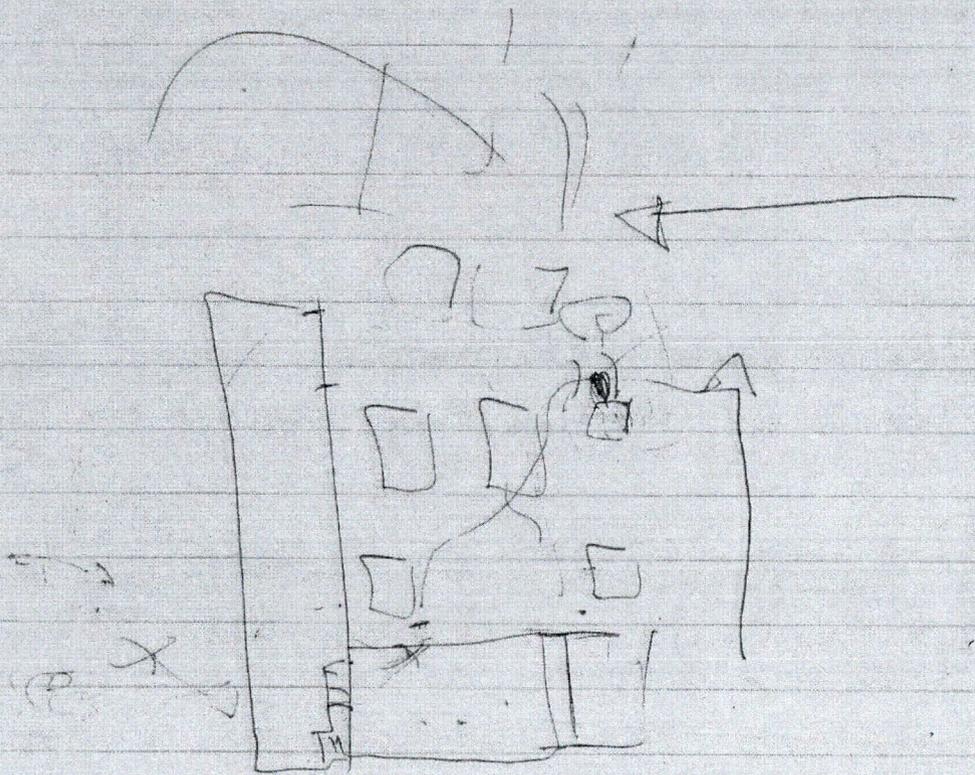
- Would you secure water sooner because of ~~that~~ overflow?

- How long have you been in op. Deluge testing? 2007 or 2010?

'Performance' does deluge testing. One operator had experience.

~~611 Regent St.~~ / ~~1727 Maple Ave~~ (210)

Idrana Bridges
& George Grimes



WHITE BOARD ISSUES

CHARTER

Sequence of events including follow-up action taken

Review and assess the equipment response to the fire resulting in water accumulation in the switchgear room. This assessment should evaluate the system response against the plant's design and regulatory requirements to assess the adequacy of the equipment design and maintenance

Review and assess operator and fire brigade performance in identifying and isolating the source of water into the switchgear room, including review of procedures, logs, and communications (internal and external)

Review and assess the effectiveness of Entergy's response to the water intrusion, this includes overall organizational response, failure modes and effects analysis developed for the equipment challenges, and interim and proposed longer term corrective actions

Review Entergy's evaluations of pertinent industry fire-fighting &E and evaluation of potential precursors relating to the potential for water accumulation, including the effectiveness of any actions taken

Collect data necessary to refine the existing risk analyses and document the final risk analysis in the S&I report

INFO NEEDED FOR EX 7

Given observed storm drain damage, need assurance of the integrity of remaining drain path

Plan to address existing partial blockage of storm drain

Confirmation 480V room drains are clear

Refined risk model of event based on current information

Cause of solenoid valves remaining open

15
b

TEAM ISSUES

- Outside storm drain inspections/backups
- Blockage in floor drain - 6 gpm drain rate and PMs to test, inspect & clean, videos ur?
- Operation of deluge solenoid valve / pressure switch
- history of issues
- ✓ why were generators in switchgear room when found water
- Model of pipe flows - debris/damage found between B9/B9A
- ✓ why was SP-75 needed to isolate deluge - review CR
- ✓ Timeline
- ✓ Station service transformer / vehicle wiring entering below Bus - conduits sealed
- ✓ Pre-fire plan out of date - CR-IP3-2015-3102

IP3 SIT Exit 29 Jun 15

2015010 report, expected out July 24

Recognise outstanding support by plant staff

Background of why SIT was launched 19 MAY
met 0309 deterministic criteria for unexpected Interaction
chartered to review 6 specific items

Results: 1 non-cited green violation of license condition 2.4
SOV 230-1 was documented to not close during 2011,
2013, and 2015 deluge system trip
used scenario where deluge was shut off but the
SOVs continued to discharge to the floor; risk
was mid 6-7 ⇒ Green
cross-cutting aspect ⇒ H.11

Observations:

organization did thorough job of modeling storm drains and determining
that they could not back up into / through the floor drains
equipment response to fire: deluge system actuation was as
designed; other components may need evaluation: Y strainers,
ball drip valves, pressure switches (all in CAP); floor drains
PM may not be adequate to verify floor drains unobstructed
fire brigade performance: properly isolated deluge within 30 minutes
properly terminated discharge of water to floor

operating experience - item from 1995 at Millstone was evaluated,
was not carried over historically

will develop communications plan for report issuance, dialog with Entergy
prior to public release of report

Wayne - IPEEE shows surge rooms at both units critical, NRC has concerns
regarding no indication/warnings for operators about flooding

Bob Walpole
Tom Setzer
Sarah Rich
Wayne Schmidt
Dave Manzi
Glenn Dante
Ho Neih
Doug Tift
left at IP

Stewart, Scott

From: Setzer, Thomas
Sent: Monday, June 15, 2015 6:13 AM
To: Burritt, Arthur; Newman, Garrett
Cc: Stewart, Scott; Bolger, Allyce
Subject: RE: IP3 IPE Control Building flooding

Sarah reviewed some paperwork that was around this same timeframe and the recommendation was to make all the piping seismic. Supports were added to the piping. I think this is the same issue as what she reviewed.

-----Original Message-----

From: Burritt, Arthur
Sent: Friday, June 12, 2015 12:24 PM
To: Newman, Garrett; Setzer, Thomas
Cc: Stewart, Scott; Bolger, Allyce
Subject: RE: IP3 IPE Control Building flooding

Outstanding inspection work! Keep going

Tom,
We may now have a bases for a PD with the drains.

-----Original Message-----

From: Newman, Garrett
Sent: Friday, June 12, 2015 12:10 PM
To: Setzer, Thomas; Burritt, Arthur
Cc: Stewart, Scott; Bolger, Allyce
Subject: IP3 IPE Control Building flooding

After our discussion this morning on other flood sources in the switchgear room, I looked at the IPE. They identified the vulnerability of a deluge piping break and made some recommendations including keeping the drains clear [despite that it wouldn't be able to keep up] and building a drain to the diesel valve room. NRC asked how they were going to act on the recommendation in an RAI and NYPA said a study was in progress (1995). No commitments were made. It appears we were ok with that response because it's not mentioned in the SER (2001).

I don't know if that helps you Tom; Wayne probably reviewed it already. We can look for that study for our flooding review.

b-76

Section C5

CONCLUSIONS AND RECOMMENDATIONS

Internal flooding can initiate or exacerbate a core damage accident. A large number of flooding scenarios were evaluated and subjected to deterministic and probabilistic analyses. From these analyses, it was concluded that three flooding scenarios have estimated frequencies exceeding $10^{-6}/\text{yr}$:

- The rupture of the instrument air closed cooling water system in the control building switchgear room (case C4.2.2.2)
- The rupture of the fire protection system in the control building switchgear room (case C4.2.2.4)
- The rupture of the fire protection system in the control building east stairwell (case C4.2.2.8).

The scenarios can be mitigated by relatively simple measures should cost-benefit analyses and detailed engineering analyses show mitigation to be desirable:

- Replace the automatic make-up to the instrument air closed cooling water system tank with manually controlled make-up or make-up that is restricted to the normally anticipated leak rate. While automatic make-up was presumably installed to compensate for possible leaks, it is clearly counter-productive if large continued leaks lead to the accumulation of water within the control building switchgear room. The elimination of automatic make-up with a high flow rate eliminates case C4.2.2.2, rupture of the IACCW system, as a source of concern.
- Prevent a rupture of the fire protection system in the deluge room from flooding the control building switchgear room. This could be accomplished by closing the open door between the deluge room and switchgear room and establish a means to ensure that water escaping into the deluge room is discharged to the turbine building or outside. This action would eliminate case C4.2.2.4 as a source of concern. Alternatively, the contribution to core damage of accident sequences initiated by rupture of the fire protection system in the deluge room could be reduced significantly by routine non-destructive examination of the valves, welds and pipes in that room and by implementing maintenance isolation procedures for fire protection equipment in that room that require independent verification, with written check-off procedures, of valve closure.
- Replace the present door between the control building switchgear room and the control building east stairwell with a water-tight door. Because the curb below this door is

higher than the critical flood height of the 480-Vac switchgear, drainage through gaps beneath the door will not mitigate flooding initiated within the switchgear room. They will, however, allow floods originating in the control building east stairwell or AC equipment room to propagate into the switchgear room and damage the switchgear. The replacement of the existing door with a water-tight door will therefore eliminate case C4.2.2.8, rupture of the fire protection system in the control building east stairwell, as a source of concern. Alternatively, drainage of flood zone CTL15-3, the control building east stairwell, into the diesel generator valve room could be enhanced to prevent water from flowing into the control building switchgear room from the stairwell.

The susceptibility of the plant to internal flooding could also be reduced if a number of other steps are taken:

- Ensure that the floor drains within the control building function properly.
- Enhance drainage of flood zone CTL15-1, the control building switchgear room by installing a trench, with water trap, to allow flow into the diesel generator valve room. A trench may well mitigate the effects of service water and fire protection system rupture in the switchgear room.
- Install shields to prevent the IACCW line from spraying switchgear in flood zone CTL15-1.
- Implement procedures to direct the operators to use SOP-EL-12 to align the alternative safe shutdown equipment to MCC-312A should power from all 480-Vac safeguard buses be lost while offsite power is available. Power to MCC-312A can be supplied via the 6.9-kV switchgear.
- Implement maintenance isolation procedures to require independent verification of water line isolation immediately prior to the start of maintenance should this maintenance require the opening of water lines in the control building.

Lally, Christopher

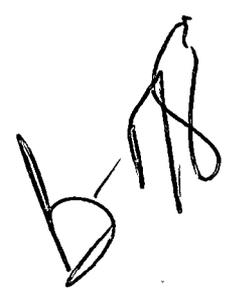
From: Pickett, Douglas
Sent: Tuesday, June 23, 2015 9:22 AM
To: Petch, Jeromy; Bolger, Allyce; Burritt, Arthur; Knutson, Ed; Newman, Garrett; Pinson, Brandon; Schussler, Jason; Setzer, Thomas; Siemel, Beth; Stewart, Scott; Pinson, Brandon
Cc: Dudek, Michael; Frumkin, Daniel; Screnci, Diane; Sheehan, Neil; Tiff, Doug; McNamara, Nancy; Guzman, Richard
Subject: Chairman's Response to Congresswoman Lowey RE: Indian Point Transformer Failure

FYI – The link below contains the Chairman's response to Congresswoman Lowey's concerns about the recent transformer failure at IP3.

[View ADAMS P8 Properties ML15168B114](#)

[Open ADAMS P8 Document \(Limited Appearance Statement - Commissioner Burns Reply Letter to Initial Letter from Congresswoman Nita M. Lowey Regarding the May 9, 2015 Transformer Fire at Indian Point, Unit 3\)](#)

Douglas V. Pickett, Senior Project Manager
Indian Point Nuclear Generating Unit Nos. 2 & 3
James A FitzPatrick Nuclear Power Plant
Douglas.Pickett@nrc.gov
301-415-1364



Lally, Christopher

From: Screnci, Diane
Sent: Tuesday, July 14, 2015 9:53 AM
To: Setzer, Thomas
Subject: RE: IP SIT report

No, I think it's all there. It might not all be in the Q&A, but I think I'll have all the information I need in total.

Diane Screnci
Sr. Public Affairs Officer
USNRC, RI
610-337-5330

From: Setzer, Thomas
Sent: Tuesday, July 14, 2015 9:52 AM
To: Screnci, Diane
Subject: RE: IP SIT report

Thanks Diane, I made the change.

Overall, do you think you need me to add many Q+As or other detail to help you with any inquiries?

From: Screnci, Diane
Sent: Tuesday, July 07, 2015 11:14 AM
To: Setzer, Thomas
Subject: RE: IP SIT report

Tom,
In the third key message, I'd put the second sentence in parenthesis in a different color so it isn't accidentally included in anything emailed to external folks.

Otherwise, looks good.

Diane Screnci
Sr. Public Affairs Officer
USNRC, RI
610-337-5330

From: Setzer, Thomas
Sent: Thursday, July 02, 2015 11:45 AM
To: Tift, Doug; McNamara, Nancy; Screnci, Diane; Sheehan, Neil
Subject: IP SIT report

I have attached a draft COMM plan for your review. I plan on issuing the IP SIT report on Thursday July 23, 2015. The report is in draft and is being reviewed. Please provide any comments you have or contact me with any questions.

Thank you
TOM

B-179

Lally, Christopher

From: Setzer, Thomas
Sent: Tuesday, July 14, 2015 9:00 PM
To: Burritt, Arthur
Subject: Fwd: RE: 2 questions from Art on IP fire response

FYI...we can discuss tomorrow.

----- Original Message -----

From: "Fuhrmeister, Roy" <Roy.Fuhrmeister@nrc.gov>
Date: Tue, July 14, 2015 5:18 PM -0400
To: "Setzer, Thomas" <Thomas.Setzer@nrc.gov>
Subject: RE: 2 questions from Art on IP fire response

From: Setzer, Thomas
Sent: Tuesday, July 14, 2015 3:24 PM
To: Fuhrmeister, Roy
Subject: 2 questions from Art on IP fire response

Roy – 2 questions from Art:

1. Did any procedure or pre-fire plan, etc, direct the operators to isolate the deluge system when they did?

Their training tells them to isolate the deluge when they are ready to apply fire fighting foam. It took them a while (~25 minutes) to get the foam ready to go as they were using the high volume nozzles and a foam tote (275 gallons - ~2200 lb). They needed to find a fork lift to move the tote of foam concentrate. You want to turn off the deluge to prevent washing away the fire fighting foam. The foam will blanket a pool of oil, cutting it off from oxygen. The flouroprotien foam they were using will also stick to structures, such as piping and a transformer casing and help to smother the fire.

2. When the fire reflashed, would there have been any procedural requirement to reactivate curtain wall deluge? If not, should they have reactivated it?

At the time of the reflash, they were applying foam to the transformer and the moat, as this is the most effective means of fighting a pool fire. With the oil out of the transformer casing they were dealing with a pool of oil. You would not want to turn the deluge back on at this time as it would wash away the foam. When the fire reflashed, it was on a bushing at the top of the transformer. They immediately put more foam on it to put it out. It was also at this time they called for Verplank to assist. The pre-fire plan says to call Verplank to assist for a "working" transformer fire. Verplank apparently has a ladder truck which will allow them to get above the transformer, as well as the capability to recharge SCBA canisters. A "working" fire is one which is actively burning. Up until the reflash, it was pretty much out. Even the reflash wasn't very big and didn't last long. They used a lot of foam out there. I'm told the foam was 3 feet deep in the transformer yard.

Hope this meets his needs.

Roy L. Fuhrmeister

Lally, Christopher

From: Setzer, Thomas
Sent: Friday, July 17, 2015 1:27 PM
To: Fuhrmeister, Roy
Cc: Burritt, Arthur
Subject: offsite fire support

Hi Roy – a question about the call to Verplanck and Montrose for offsite fire support. It appears from the timeline that they called for the support when the fire reflashd. Do you have any insights/assessment on whether or not that was timely/untimely?

Lally, Christopher

From: Fuhrmeister, Roy
Sent: Tuesday, July 21, 2015 7:25 AM
To: Setzer, Thomas
Subject: RE: offsite fire support

That would appear to be in line with the pre-fire plan. The pre-fire plan says to call for offsite support for a "working" transformer fire. When the deluge system actuated, that pretty much put out the transformer fire. As the brigade shut off the deluge system and started to apply foam, the fire was still pretty much out. When the reflash occurred, they now had a "working" transformer fire.

Hope that helps.

Roy L. Fuhrmeister

From: Setzer, Thomas
Sent: Friday, July 17, 2015 1:27 PM
To: Fuhrmeister, Roy
Cc: Burritt, Arthur
Subject: offsite fire support

Hi Roy – a question about the call to Verplanck and Montrose for offsite fire support. It appears from the timeline that they called for the support when the fire reflash occurred. Do you have any insights/assessment on whether or not that was timely/untimely?



Lally, Christopher

From: MorganButler, Kimyata
Sent: Thursday, July 23, 2015 12:45 PM
To: Gilles, Nanette; Cabbage, Amy; Castleman, Patrick; Krsek, Robert
Cc: Setzer, Thomas; Burritt, Arthur; Santos, Cayetano
Subject: Indian Point Special Inspection Report
Attachments: IP SIT report 2015010.pdf

Importance: High

Good Afternoon,

Attached is the final Special Inspection Report for Indian Point 3. As you may recall, the Special Inspection Team (SIT) was formed to review the circumstances surrounding the May 9, 2015, water accumulation in the Unit 3 safety-related switchgear room following the 31 main transformer failure and reactor trip event at the site. The report documents one NRC-identified finding of very low safety significance (Green). However, because of the very low safety significance, and because it has been entered into the licensee's corrective action program, the NRC is treating this finding as a non-cited violation (NCV), consistent with Section 2.3.2.a of the NRC Enforcement Policy.

I also would like to share with you the following key messages related to the special inspection and subsequent SIT report:

Key Messages

- NRC inspection determined there was no adverse impact to public health or safety as a result of the event.
- We found that the 31 main transformer failure and water that accumulated in the switchgear room did not adversely affect the safe shutdown of the plant. Specifically, plant operators took appropriate actions to isolate the source of the water, which prevented the actual water level (0.4 inch) from reaching the height of safety-related equipment (4.875 inches). The probability that the water would have adversely affected safety-related equipment due to operator errors in isolating the source of water was determined to be extremely small.
- The focus of the SIT was to investigate the water found in the Unit 3 safety-related switchgear room. This water was determined to come from three deluge system solenoid valves located in a room adjacent to the switchgear room that had remained open during the event. The three solenoid valves ported water to the floor, which flowed into the switchgear room. Clogged drains caused the water to accumulate and produce minor flooding (0.4 inch) in the switchgear room.
- Entergy has taken appropriate interim and longer term corrective actions, which has included repairing the solenoid valves and pressure switches, and inspecting/cleaning the floor drains.
- Three full-time NRC resident inspectors continue to closely monitor the licensee's actions at Indian Point.
- This inspection did not review the causes of the failure of the 31 main transformer, nor did it investigate the transformer oil spill into the Hudson River.

RI staff will release the report publically later this afternoon (7/23/15). Please let me, Arthur Burritt (BC, RI/DRP) or Tom Setzer (SPE, RI/DRP) know if you have any questions.

Thanks,

Kim

Lally, Christopher

From: Setzer, Thomas
Sent: Thursday, July 23, 2015 2:15 PM
To: Nieh, Ho; Stewart, Scott
Cc: Burritt, Arthur; Stewart, Scott; Rich, Sarah; Fuhrmeister, Roy
Subject: Issue during call with Larry Coyle

Hi Ho and Mike-

Just a note to capture an issue we had on the phone with Larry Coyle when we discussed the SIT report.

Larry took issue with the 50 gpm flowrate that we documented in the report as being the actual total solenoid valve flowrate into the room during the event. He feels that the actual flowrate is the as-found result they got from testing (12 gpm). He went on to say that neither he nor his team were aware that we did not agree with the 12 gpm. Also, he stated that if the NRC felt 50 gpm was the actual, that this was not communicated at the exit or fully understood by his team. He mentioned that they may want to "send in a note" to the NRC regarding this difference of opinion.

I'd be happy to share my exit notes with you, where I explained during the exit meeting on June 24 why we felt the as found rate of 12 gpm was too low, and that we were going with 50 gpm. I can also say without hesitation that this difference in opinion was discussed, at length, with their team prior to the exit meeting.

I'd be happy to discuss further if you would like.

VR
TOM

Lally, Christopher

From: Setzer, Thomas
Sent: Monday, July 27, 2015 7:39 AM
To: Scott, Michael
Subject: Re: Fwd: Indian Point Special Inspection Report

Thanks Mike, this made my morning :)

----- Original Message -----

From: "Scott, Michael" <Michael.Scott@nrc.gov>
Date: Fri, July 24, 2015 7:50 PM -0400
To: "Lew, David" <David.Lew@nrc.gov>, "Dorman, Dan" <Dan.Dorman@nrc.gov>, "Nieh, Ho" <Ho.Nieh@nrc.gov>, "Screnci, Diane" <Diane.Screnci@nrc.gov>, "Sheehan, Neil" <Neil.Sheehan@nrc.gov>, "Burrirt, Arthur" <Arthur.Burrirt@nrc.gov>, "Tiff, Doug" <Doug.Tiff@nrc.gov>, "McNamara, Nancy" <Nancy.McNamara@nrc.gov>, "Setzer, Thomas" <Thomas.Setzer@nrc.gov>
Subject: Fwd: Indian Point Special Inspection Report

Fyi - I believe the comm plan for this was excellent work by the staff.

Tom Setzer had the lead.

From: "MorganButler, Kimyata" <Kimyata.MorganButler@nrc.gov>
Subject: FW: Indian Point Special Inspection Report
Date: 24 July 2015 14:24
To: "Scott, Michael" <Michael.Scott@nrc.gov>
Hi Mike,

I received your voicemail. Below is the notification to the Commissioner's TAs. The TAs didn't raise any additional questions. All were glad that they received notification before the report was issued to the public. I also notified the EDO/DEDO/AO of the SIT report and provided the Comm Plan (I cc'ed Dan and Dave...next time I will make sure that you're cc'ed as well).

Have a great weekend!

Kim

From: Setzer, Thomas
Sent: Thursday, July 23, 2015 1:09 PM
To: Gilles, Nanette; MorganButler, Kimyata; Cabbage, Amy; Castleman, Patrick; Krsek, Robert
Cc: Burrirt, Arthur; Santos, Cayetano
Subject: RE: Indian Point Special Inspection Report

Will go public approx. 4pm today.

From: Gilles, Nanette
Sent: Thursday, July 23, 2015 12:52 PM
To: MorganButler, Kimyata; Cabbage, Amy; Castleman, Patrick; Krsek, Robert
Cc: Setzer, Thomas; Burrirt, Arthur; Santos, Cayetano
Subject: RE: Indian Point Special Inspection Report

Thanks, Kim. I see the report is signed today. When will it be public?

From: MorganButler, Kimyata
Sent: Thursday, July 23, 2015 12:45 PM
To: Gilles, Nanette; Cabbage, Amy; Castleman, Patrick; Krsek, Robert
Cc: Setzer, Thomas; Burritt, Arthur; Santos, Cayetano
Subject: Indian Point Special Inspection Report
Importance: High

Good Afternoon,

Attached is the final Special Inspection Report for Indian Point 3. As you may recall, the Special Inspection Team (SIT) was formed to review the circumstances surrounding the May 9, 2015, water accumulation in the Unit 3 safety-related switchgear room following the 31 main transformer failure and reactor trip event at the site. The report documents one NRC-identified finding of very low safety significance (Green). However, because of the very low safety significance, and because it has been entered into the licensee's corrective action program, the NRC is treating this finding as a non-cited violation (NCV), consistent with Section 2.3.2.a of the NRC Enforcement Policy.

I also would like to share with you the following key messages related to the special inspection and subsequent SIT report:

Key Messages

- NRC inspection determined there was no adverse impact to public health or safety as a result of the event.
- We found that the 31 main transformer failure and water that accumulated in the switchgear room did not adversely affect the safe shutdown of the plant. Specifically, plant operators took appropriate actions to isolate the source of the water, which prevented the actual water level (0.4 inch) from reaching the height of safety-related equipment (4.875 inches). The probability that the water would have adversely affected safety-related equipment due to operator errors in isolating the source of water was determined to be extremely small.
- The focus of the SIT was to investigate the water found in the Unit 3 safety-related switchgear room. This water was determined to come from three deluge system solenoid valves located in a room adjacent to the switchgear room that had remained open during the event. The three solenoid valves ported water to the floor, which flowed into the switchgear room. Clogged drains caused the water to accumulate and produce minor flooding (0.4 inch) in the switchgear room.
- Entergy has taken appropriate interim and longer term corrective actions, which has included repairing the solenoid valves and pressure switches, and inspecting/cleaning the floor drains.
- Three full-time NRC resident inspectors continue to closely monitor the licensee's actions at Indian Point.
- This inspection did not review the causes of the failure of the 31 main transformer, nor did it investigate the transformer oil spill into the Hudson River.

RI staff will release the report publically later this afternoon (7/23/15). Please let me, Arthur Burritt (BC, RI/DRP) or Tom Setzer (SPE, RI/DRP) know if you have any questions.

Thanks,

Lally, Christopher

From: Setzer, Thomas
Sent: Friday, August 07, 2015 2:36 PM
To: Newman, Garrett; Stewart, Scott
Subject: FW: License Renewal Commitments at IP3

FYI – Mel and Art may discuss on Monday. The LR commitments are copied below.

From: Setzer, Thomas
Sent: Friday, August 07, 2015 2:24 PM
To: Gray, Mel
Subject: RE: License Renewal Commitments at IP3

Hi Mel – Im in Chattanooga TTC doing the BWR series and am in between classes right now on break. Im here until August 14. I return to the office on Aug 17.

From: Gray, Mel
Sent: Friday, August 07, 2015 2:23 PM
To: Setzer, Thomas
Cc: Burritt, Arthur
Subject: FW: License Renewal Commitments at IP3

Tom, are you in office Monday?

From: Modes, Michael
Sent: Friday, August 07, 2015 11:52 AM
To: Gray, Mel <Mel.Gray@nrc.gov>
Subject: Re: License Renewal Commitments at IP3

This is the SAMA part of the Environmental Report. Regions have nothing to do with this. This needs to go to HQ ... specifically Michael Wentzel in DLR.

Michael C. Modes
Sr. Reactor Inspector
Nuclear Regulatory Commission
<https://goo.gl/maps/VSQSA>
(610) 337-5198

From: Gray, Mel
Sent: Friday, August 7, 2015 11:27 AM
To: Modes, Michael
Subject: FW: License Renewal Commitments at IP3

Can we discuss Monday and develop next steps?

From: Setzer, Thomas

Sent: Thursday, August 06, 2015 3:35 PM

To: Gray, Mel <Mel.Gray@nrc.gov>

Cc: Screnci, Diane <Diane.Screnci@nrc.gov>; Burritt, Arthur <Arthur.Burritt@nrc.gov>

Subject: License Renewal Commitments at IP3

Hello Mel-

David Lochbaum sent in an email to Diane Screnci asking some License Renewal-related questions about the SIT inspection report we published for Indian Point (I was the Team Leader). In this SIT, we investigated water that was found in the IP3 switchgear room following the 31 Main Transformer fire on May 9.

The inspection we conducted revealed that the door between the deluge room and the switchgear room may not be "waterproof", as water was seen on the floor at the base of the door and coming from the deluge valve room. Also, the inspection revealed that the floor drains in the switchgear room were restricted (~75% plugged up).

In Dave's email to Diane (attached), he mentioned that there were two commitments made in the IP3 2007 License Renewal regarding the door and the floor drains (I copied them below). Art and I discussed this today and felt we should get your perspective on Dave's concerns, and whether or not past or upcoming inspections could be used to inform an answer back to Dave.

I am at TTC this week doing the BWR series. Feel free to email me or see Art with any questions. Thanks for your time.

VR,
TOM

Indian Point Energy Center
Applicant's Environmental Report
Operating License Renewal Stage

Table E.4-1
Phase I SAMAs Related to IPE, PSA Model Updates and IPEEE Insights
(Continued)

Phase I SAMA ID Number	SAMA Title	Result of Potential Enhancement	Screening Criteria	SAMA Disposition	Credited in PSA Model
215	Flush control building 480VAC switchgear room 15 ft elevation floor drains periodically	This SAMA would reduce the CDF contribution from 480VAC switchgear room flooding.	Already installed	IP3 preventive maintenance program has been revised to have the control building 15 ft elevation floor drains flushed during each outage. This procedural change greatly increases the likelihood that the drains at this elevation will be available to mitigate flooding in the control building and switchgear room. Therefore, this SAMA has already been implemented at IP3.	No
216	Keep both pressurizer PORV block valves open	This SAMA would reduce the CDF contribution from loss of secondary heat sink when feed and bleed is not available.	Already installed	Initiation of primary feed and bleed cooling is included in accident sequences that involve total loss of secondary side cooling and, in particular, failure to establish AFW flow. The time available to initiate feed and bleed cooling (and thus the probability of human error in taking this action) is determined by the time at which the RCPs are tripped and whether the PORV block valves are open when the reactor trip occurs. The PORVs have been replaced to eliminate leakage and allow the plant to run with the block valves open, which will enhance the likelihood of successfully initiating feed and bleed cooling. Therefore, this SAMA has already been implemented at IP3.	Yes

**Table E.4-1
Phase I SAMAs Related to IPE, PSA Model Updates and IPEEE Insights
(Continued)**

Phase I SAMA ID Number	SAMA Title	Result of Potential Enhancement	Screening Criteria	SAMA Disposition	Credited in PSA Model
217	Expand the scope of diesel generator functional tests	This SAMA would enhance the availability of the EDGs.	Already installed	Revision to EDG functional test procedures has been made to verify the operational status of each EDG building ventilation system. This procedure modification improves availability since potential failures will now be monitored. Therefore, this SAMA has already been implemented at IP3.	Yes
218	Revised the maintenance procedure FAN-009-AFW for AFW building ventilation system	This SAMA would improve the availability of the AFW building ventilation system.	Already installed	Maintenance procedure FAN-009-AFW for AFW building exhaust fans, louvers and dampers has been revised to improve the availability of AFW building ventilation system. Therefore, this SAMA has already been implemented at IP3.	Yes
219	Install adequate seismic support for the fire protection piping deluge valve station located in the control building at 15 ft elevation	This SAMA would reduce the CDF contribution from 480VAC switchgear room flooding.	Already installed	Adequate seismic support to the portion of the fire protection piping deluge valve station located in the control building at 15 ft elevation has been installed. In addition, a water proof door to the deluge valve station room has also been installed to reduce the CDF contribution from 480VAC switchgear room flooding. Therefore, this SAMA has already been implemented at IP3.	No (seismic-induced floods not modeled)

Lally, Christopher

From: Burritt, Arthur
Sent: Monday, August 10, 2015 4:30 PM
To: Scott, Michael
Cc: Nieh, Ho
Subject: FW: Indian Point Inspection Report - 05000247/2015002 and 050000286/2015002
Attachments: IP2&3 2015.002 final.pdf

For awareness, SLO service (care and feeding) creep, as we discussed

From: McKenzie, Kieta
Sent: Monday, August 10, 2015 9:07 AM
To: Tifft, Doug <Doug.Tifft@nrc.gov>; Pinkham, Laurie <Laurie.Pinkham@nrc.gov>; Screnci, Diane <Diane.Screnci@nrc.gov>; Sheehan, Neil <Neil.Sheehan@nrc.gov>; McNamara, Nancy <Nancy.McNamara@nrc.gov>
Cc: Burritt, Arthur <Arthur.Burritt@nrc.gov>
Subject: RE: Indian Point Inspection Report - 05000247/2015002 and 050000286/2015002

Good morning all,

Attached is the signed .pdf version of the subject report.

It will be going out via ListServ around 10:30 (or once OCA has completed their notifications).

Please let me know if you have any questions or concerns.

THANKS!!

Kieta

From: Tifft, Doug
Sent: Friday, August 07, 2015 2:51 PM
To: Pinkham, Laurie <Laurie.Pinkham@nrc.gov>; Screnci, Diane <Diane.Screnci@nrc.gov>; Sheehan, Neil <Neil.Sheehan@nrc.gov>; McNamara, Nancy <Nancy.McNamara@nrc.gov>
Cc: McKenzie, Kieta <Kieta.McKenzie@nrc.gov>; Burritt, Arthur <Arthur.Burritt@nrc.gov>
Subject: RE: Indian Point Inspection Report - 05000247/2015002 and 050000286/2015002

Thanks. Please get us a copy of the signed pdf version a few hours before it goes out on listserv so we can give NY a heads up.

-Doug

From: Pinkham, Laurie
Sent: Friday, August 07, 2015 2:36 PM
To: Screnci, Diane; Sheehan, Neil; McNamara, Nancy; Tifft, Doug
Cc: McKenzie, Kieta; Burritt, Arthur
Subject: Indian Point Inspection Report - 05000247/2015002 and 050000286/2015002

Art Burritt asked me to send this to all of you. He has signed the report, it will be issued by Kieta on Monday.

Thanks!

Laurie Pinkham
Administrative Assistant
Division of Reactor Projects
610-337-5384



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ENERGY NUCLEAR INDIAN POINT 3, LLC

AND ENERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-286

INDIAN POINT NUCLEAR GENERATING UNIT NO. 3

AMENDED FACILITY OPERATING LICENSE

Amendment No. 203
License No. DPR-64

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Power Authority of the State of New York (PASNY) and Entergy Nuclear Indian Point 3, LLC (ENIP3) and Entergy Nuclear Operations, Inc. (ENO), submitted under cover letters dated May 11 and May 12, 2000, as supplemented on June 13, June 16, July 14, September 21, October 26, and November 3, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I; Amdt. 203
11/27/00
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. ENIP3 and ENO are financially and technically qualified to engage in the activities authorized by this amendment; Amdt. 203
11/27/00
 - E. ENIP3 and ENO have satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements" of the Commission's regulations; Amdt. 203
11/27/00
 - F. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;

Amendment No. 225

B-88

G. ENO shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822), and to the authority of 10 CFR 50.90 and CFR 50.54(p). The combined set of plans¹ for the Indian Point Energy Center, which contain Safeguards Information protected under 10 CFR 73.21, is entitled: "Physical Security, Training and Qualification, and Safeguards Contingency Plan, Revision 0," and was submitted by letter dated October 14, 2004, as supplemented by letter dated May 18, 2006. ENO shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The ENO CSP was approved by License Amendment No. 243 and supplemental amendments.

H. ENO shall implement and maintain in effect all provisions of the approved Fire Protection Program as described in the Final Safety Analysis Report for Indian Point Nuclear Generating Unit No. 3 and as approved in NRC fire protection safety evaluations (SEs) dated September 21, 1973, March 6, 1979, May 2, 1980, November 18, 1982, December 30, 1982, February 2, 1984, April 16, 1984, January 7, 1987, September 9, 1988, October 21, 1991, April 20, 1994, January 5, 1995, and supplements thereto, subject to the following provision:

ENO may make changes to the approved Fire Protection Program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

- | | | |
|----|-----------|----------------------|
| I. | (DELETED) | Amdt. 205
2/27/01 |
| J. | (DELETED) | Amdt. 205
2/27/01 |
| K. | (DELETED) | Amdt. 49
5-25-84 |
| L. | (DELETED) | Amdt. 205
2/27/01 |
| M. | (DELETED) | Amdt. 205
2/27/01 |
| N. | (DELETED) | Amdt. 49
5-25-84 |

¹ The Training and Qualification Plan and Safeguards Contingency Plan are Appendices to the Security Plan.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

5/12 - Lyon has copy
cc: Schwencer

DSR #	35855
# OF PAGES	215

4 11-3

May 2, 1980

Docket No. 50-286

Mr. George T. Berry
General Manager and Chief Engineer
Power Authority of the State of New York
10 Columbus Circle
New York, New York 10019

Dear Mr. Berry:

We have reviewed your submittals of April 16, April 20, June 12, and July 17, 1979 and February 28, 1980 related to the Indian Point Nuclear Generating Station Unit No. 3 Fire Protection Program. These submittals provided information requested in our SER of March 6, 1979 related to resolution of incomplete items. The results of our evaluation are enclosed.

Additionally, by letter of November 26, 1979, you proposed a revision to one of your earlier proposed modifications (from that described in our SER) and identified additional fire protection modifications that would be made due to the addition of a new building for the nuclear service water pumps; and by letter of March 25, 1980 you identified a change from reliance upon a fire rated door to reliance upon a water curtain for fire protection at an opening in the Primary Auxiliary Building. We have reviewed these additional proposed modifications and changes and find them to be acceptable, as described in the enclosed report.

Finally, by letter of March 25, 1980 you requested changes to the implementation schedule for certain of the proposed modifications listed in Table 3.1 of our SER. We find these proposed schedule changes acceptable as discussed in the enclosed report.

Sincerely,

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosure:
As Stated

cc: w/enclosure
See next page

F A E

689

5.2 The licensee maintains agreements with local fire companies to assure adequate support for a fire emergency. Chiefs and officers of these fire companies are given training and orientation at the plant annually.

5.3 We find that the licensee's program for fire-fighting procedures satisfies the objectives identified in Section 2.0 of our SER and is, therefore, acceptable.

6. Quality Assurance

6.1 The design, procurement, installation, testing, and administrative control activities for fire protection will be controlled in accordance with the quality assurance program criteria of Appendix A to RTP 9.5-1.

6.2 We find that the licensee's quality assurance provisions for fire protection satisfy the objectives identified in Section 2.0 of our SER.

2.6 Switchgear Room Protection (3.2.3)

Our SER noted that protection for this area included a new automatic total flooding CO₂ system, the addition of fire barriers where control cables for the auxiliary feedwater pumps are routed in close proximity, ionization type smoke detectors at the ceiling, portable extinguishers and hose stations that are nearby. Our SER noted that with the exception of the auxiliary feedwater cables noted above, the separation between redundant divisions appeared to be adequate so that a postulated fire would not affect both divisions; however, the licensee was requested to provide further detail to verify this. Additionally, we recommended that firestops be provided in the two cable trays (55N and 60N) that provide a pathway for fire to be transmitted between redundant divisions.

By letter of April 16, 1979, the licensee provided the further detail requested to demonstrate separation of redundant safe shutdown cabling, and proposed to install firestops in trays 55N and 60N. As a result of this further review, the licensee has proposed to install an additional fire barrier to improve separation of redundant control cables. The design of this barrier as well as the one noted above will be similar to the design tested and accepted for use at the Rancho Seco facility.

We have reviewed this additional information and the design criteria for the proposed fire barriers and find that these barriers will provide adequate separation between redundant cabling in this area to assure that safe shutdown can be achieved. Based on the above considerations and the protection already provided, subject to implementation of the additional modifications, we find that fire protection for the switchgear room satisfies the objectives of Section 2.0 of our SER and is therefore acceptable.

Fuhrmeister, Roy

From: Rich, Sarah
Sent: Tuesday, June 09, 2015 3:52 PM
To: Setzer, Thomas; Schmidt, Wayne; Fuhrmeister, Roy
Subject: RE: Items we are asking for - Ip SIT

Do we want to ask them how long they think the condition(s) existed?

From: Setzer, Thomas
Sent: Tuesday, June 09, 2015 3:49 PM
To: Schmidt, Wayne; Rich, Sarah; Fuhrmeister, Roy
Subject: Items we are asking for - Ip SIT

Please let me know if this is a complete list for a call with the licensee tomorrow morning.

TOM

1. What is the condition of the y-strainers for the 31 MT, 32MT and UAT? Could corrosion products have affected the flowrate through the solenoid valve?
2. What are the flowrates through the solenoid valves for 32 MT and UAT?
3. What is the risk associated with not completely isolating deluge water, where water at system pressure continues to flow through an open solenoid valve after the isolation valve is shut.
4. What is the condition of the ball drip valves for 31MT, 32MT and UAT, and are these a contributor to water into the room?

Fuhrmeister, Roy

From: Setzer, Thomas
Sent: Wednesday, June 10, 2015 3:13 PM
To: Rich, Sarah; Schmidt, Wayne; Fuhrmeister, Roy
Cc: Burritt, Arthur
Subject: RE: UPDATE on items we askef for - IP SIT

The licensee would like to hold a call tomorrow at noon. I will send on the bridge info when I get it. Please plan on calling in or joining me in my office.

TOM

From: Setzer, Thomas
Sent: Wednesday, June 10, 2015 1:33 PM
To: Rich, Sarah; Schmidt, Wayne; Fuhrmeister, Roy
Cc: Burritt, Arthur
Subject: UPDATE on items we askef for - IP SIT

HI guys-

IPEC is performing the test on the deluge SOVs today. I gave them the 4 questions below. I proposed that they call me tomorrow with their answers with you guys also on the phone, so as soon as I get a time/bridge, I will forward that on.

I would like for us to hear them out on the answers and ask questions if needed. Then I would like to hold an internal call where we can determine if the information is acceptable. I will be in touch tomorrow with those times.

Thanks
TOM

From: Setzer, Thomas
Sent: Tuesday, June 09, 2015 3:49 PM
To: Schmidt, Wayne; Rich, Sarah; Fuhrmeister, Roy
Subject: Items we are asking for - Ip SIT

Please let me know if this is a complete list for a call with the licensee tomorrow morning.

TOM

1. What is the condition of the y-strainers for the 31 MT, 32MT and UAT? Could corrosion products have affected the flowrate through the solenoid valve?
2. What are the flowrates through the solenoid valves for 32 MT and UAT?
3. What is the risk associated with not completely isolating deluge water, where water at system pressure continues to flow through an open solenoid valve after the isolation valve is shut.
4. What is the condition of the ball drip valves for 31MT, 32MT and UAT, and are these a contributor to water into the room?

10
5:17

From: Dentel, Glenn
To: Santos, Cayetano
Subject: RE: SIT for Indian Point 3
Date: Friday, May 15, 2015 9:11:00 AM

Great! If there is anything else you need, just give me a call.

Glenn Dentel

Branch Chief responsible for oversight of Seabrook, Salem and Hope Creek
610-337-5233 (w)

From: Santos, Cayetano
Sent: Friday, May 15, 2015 9:07 AM
To: Dentel, Glenn
Subject: FW: SIT for Indian Point 3

Glenn,

I got the email I was looking for. Thanks for your help.

Have a great weekend. It was nice talking to you again.

Tanny

From: Dorman, Dan
Sent: Friday, May 15, 2015 8:59 AM
To: Santos, Cayetano
Cc: Lew, David; Nieh, Ho; Scott, Michael; Burritt, Arthur; Setzer, Thomas; MorganButler, Kimyata
Subject: FW: SIT for Indian Point 3

Tanny,

Here is the message that Brian Holian referred to regarding our plans to send an SIT to IP next week. Let us know if you need anything else.

Thanks

Dan

From: Dorman, Dan
Sent: Thursday, May 14, 2015 5:35 PM
To: Johnson, Michael
Cc: Tracy, Glenn; Holian, Brian; Dean, Bill; MorganButler, Kimyata; Nieh, Ho; Screnci, Diane; Sheehan, Neil; Tiff, Doug; McNamara, Nancy
Subject: SIT for Indian Point 3

Mike (and actors),

As part of our ongoing resident inspector review of the transformer explosion at Indian Point Unit 3 last Saturday, we have been focused on an accumulation of water in the Unit 3 switchgear room while the deluge system was operating during the first 25 minutes of the event. The switchgear room contains both trains of switchgear and excess flooding could

BGA

put the plant in a station blackout. The 0309 assessment put the risk in the overlap range between resident follow-up and Special Inspection Team. The licensee has postulated the source of water as the deluge valve actuators which continue to bleed water off the deluge line following actuation. There is also indication that the deluge capacity overwhelms the site drainage to the discharge canal, potentially causing backup to the switchgear room. Region I has concluded that a Special inspection Team is appropriate to independently verify the source of flooding and to ensure a full understanding of the sequence of events and the licensee's performance in identifying and terminating the flooding.

We are developing a team and charter and expect them to be onsite by the middle of next week. We will be developing appropriate press release and stakeholder outreach plans in the next few days.

Dan

Documents Reviewed:

Condition Reports

CR-IP3-2015-03121 – 6 gpm drain rate
CR-IP3-2015-03090 – damaged storm drain
CR-IP3-2015-03083 – solenoid valve stayed open
CR-IP3-2015-02921 – floor drain backed up during event
CR-IP3-2015-02970 – broken valve yoke arm
CR-IP3-2015-03025 – blockages in floor drains
CR-IP3-2015-03055 – wrong level in FSAR
CR-IP3-2015-03109 – sign in switchgear room is wrong
CR-IP3-2015-02133 – solenoid does not close after testing
CR-IP3-2013-02214 – solenoid does not close after testing
CR-IP3-2011-02177 – solenoid does not close after testing
CR-IP3-2007-01834 – main transformer failure
CR-IP3-1998-00737
CR-IP2-2011-04324 – Irene flooding

Work orders

WO 00346693, "Valve Leaking One Drop Per Second, and Gland Stud Is Broken"
WO 00273284, "Valve Does Not Close When De-Energized By Normal Means" – completed
solenoid valve replacement
WO 00414015, "

Procedures

0-AOP-SEISMIC-1, "Seismic Event," Revision 7
3-AOP-FLOOD-1, "Flooding," Revision 9
OAP-008, "Severe Weather Preparations," Revision 22
3-ONOP-FP-1, "Plant Fires," Revision 38
3-ONOP-FP-1, "Plant Fires," Revision 39
3-PT-R040, "Transformer Yard Water Deluge Systems Testing," Revision 19
3-PT-R040, "Transformer Yard Water Deluge Systems Testing," Revision 20, completed
3/24/15

Miscellaneous

Indian Point Unit 3 Final Safety Analysis Report, Revision 05, 2013
Indian Point Unit 3 Technical Requirements Manual
Indian Point Unit 3 Operations Log
ACTS item# 14218, Source Document SER-95-8, dated 5/13/96
IP3-10895, "Operations Document Feedback Form," dated 4/11/2011
PPF-380, "Main Transformer Yard," Revision 3
Standing Order 15-04
Event Recollections from 5/9/15
Mod No. 93-03-433 FRW, "Control Building Elevation 15'-0" Flooding," Rev. 0

B-915

LER 93-51-00, "A Seismically Induced Failure of a Fire Main, Caused by Personnel Error, Can Place the Plant Outside Design Basis"

EC 57718, "Temporary Modification to Divert Water from the 480V Switchgear Room to EDG 31 Sump Area"

Calculations

IP3-CALC-FD-01821, "Response to SER 95-8," Revision 0

Drawings

9321-F-40633-10, "Turbine and Control Building Floor and Hub Drains – El 15'-0"," Revision 10

9321-LL-30420-18, "Schematic Diagram Fire Protection Water System, Main, Unit Aux and Station Aux Transformers," Revision 3

9321-F-40033-11, "Turbine Building and Heater Bay Floor and Hub Drains – El 15'-0"," Revision 11

9321-F-40913, Sh. 1, "Flow Diagram of Plant Fire Protection System Sheet No. 2," Revision 29

9321-F-40913, Sh. 2, "Flow Diagram of Plant Fire Protection System Sheet No. 3," Revision 5

People

2. Equipment Response to Fire Resulting in Water in Switchgear Room

a. Inspection Scope

b. Findings and Observations

Entergy reviewed drawings of the controls for the deluge valve solenoid valves, and determined that the drawings indicate that the solenoid valves should open on a signal of high temperatures near the transformer, and should close once six PSI of pressure is sensed downstream of the deluge valve. Entergy's surveillance procedure for the deluges verifies proper operation of the solenoid valve to open on a high temperature signal, and verifies that the solenoid valve is closed once the deluge valve is restored, but does not include steps to identify whether the solenoid valve remains open while the system is discharging. Interviews with an individual involved in the testing indicate that their expectation was that the solenoid valve would remain open while the system was discharging, and only close once the water flow was stopped when the isolation valve was closed. The individuals performing the testing identified that the solenoid valve on the 32 main transformer deluge valve did not close even after the system was isolated during testing in 2011, 2013, and 2015. Entergy replaced the solenoid valve in 2013 but it did not resolve the issue.

3. Operator and Fire Brigade Performance in Identifying and Isolating the Source of Water into the Switchgear Room

a. Inspection Scope

b. Findings and Observations

In 1996, New York Power Authority, then-owner of Indian Point Unit 3, evaluated an industry operating experience event where unexpected service water leakage flooded a switchgear room and required the plant to de-energize the busses in the room. As part of their evaluation, NYPA identified that the sources of water in their own 480 V switchgear room included two relief valves on the service water piping, and the fire protection piping. They calculated that the expected flow rate from the service water relief valves was 58 gallons per minute. They did not quantify the postulated leak rate from the fire protection piping in their evaluation, but concluded that it was bounded by the expected drain rate of the floor drains, which they calculated to be about 100 gallons per minute.

Entergy's periodic maintenance program included testing the 480 V switchgear room floor drains every two years to verify that they could drain 10 gallons of water in less than one minute.

PD:

32 MT solenoid valve had three condition reports written reporting that the solenoid valve did not close during testing. This provided an opportunity to identify that the solenoid valves were remaining open due to blocked pressure switch lines. Entergy did not address the condition identified, contrary to EN-LI-102.

They believed that the solenoid valves should discharge water continuously after actuation, however, they were aware that their drain system was not credited for water removal from the switchgear room.

The line supplying the diaphragm is upstream of the isolation valves for the deluges, so it is possible that a fire brigade member would isolate the deluges upon direction from the fire brigade leader, note that they were still discharging and assume it was due to the downstream header draining out, and then leave the solenoid valves unisolated. The flow rate through the solenoid valves would increase, as the fire header pressure increased due to the significantly decreased discharge from the system.

During the event, they ended up closing valve FP-75 because they cracked the yoke on one of the deluge isolation valves, not because it is a standard response to deluge actuation.

It is calculated that it would take over an hour for the switchgear room to reach the critical height, so it is unlikely the problem would not be addressed and the flow terminated due to the heavy foot traffic through the room.

The drains are not credited for water removal, which means they do not have a designated flow rate they must accommodate. Entergy tested the drains to verify they could discharge 10 gallons per minute. During the event the drains were able to drain about 25 gallons per minute. However, it would be reasonable to assume that they would drain NO water from the room, because they are not credited for anything. (basically, they were lucky the drains drained anything at all).

b. Findings and Observations

During the response to the transformer fire, fire brigade members traversed the 480 volt switchgear room in order to bring foam totes from their storage location in the turbine building to the south side of the fire. These fire brigade members observed the water intrusion and notified the fire brigade leader and the control room. The fire brigade leader directed the fire brigade members to isolate the deluges, which they promptly did, reducing and then terminating the flow of water into the 480 V switchgear room. The fire brigade leader would have directed isolating the deluges in any case because the deluges interfere with applying foam to the oil-based fire. In the 2007 main transformer fire, the deluges were secured approximately ten minutes into the fire to allow the fire brigade to apply foam. This was determined based on review of operator logs, individual recollections, fire response procedures and interviews with the fire brigade leader and fire brigade members.

4. Effectiveness of Entergy Response to Water Intrusion

a. Inspection Scope

b. Findings and Observations

In response to the water intrusion, Entergy immediately secured the deluges and took action to remove the water from the room. Following the event, Entergy implemented a temporary modification to provide a pathway for the water to drain from the 480 V switchgear room. The room is connected to the 31 diesel generator room, which contains a large sump and drain line to mitigate potential service water pipe breaks. The temporary modification included a berm to direct water from the switchgear room to the sump, prestaged chocks to hold the two fire doors open, and steps added to the plant fire response and alarm response procedure to direct a plant operator to open the doors and institute a fire watch. To address extent of condition, a standing order was issued to Unit 2 that directed a plant operator to respond to the Unit 2 480 V switchgear room in the event the transformer deluge systems actuate, who would then monitor for leakage or open the door between the deluge room and the turbine building to allow water to drain in that direction.

Entergy also took action to inspect the floor drain lines for blockages. Several blockages were identified downstream of the floor drains. Entergy performed troubleshooting activities and determined that the drain next to the deluge valves could drain a steady-state flow rate of only six gallons per minute. Further testing showed that the entire floor drain system for the room could drain a total of twenty five gallons per minute.

5. Evaluation of Pertinent Industry Operating Experience

a. Inspection Scope