

**From:** David Lew  
**To:** Wayne Schmidt  
**Date:** Fri, Aug 18, 2000 12:26 PM  
**Subject:** Fwd: Re: TA Brief next week

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**From:** Doug Coe  
**To:** Bill Bateman, Edmund Sullivan, Jack Strosnider, Marsha Gamberon  
Richard Wessman, Steven Long, Terence Chan(...)  
**Date:** Fri, Aug 18, 2000 12:13 PM  
**Subject:** Re: TA Brief next week

Thanks Marsha. I've cc'd a few other internal stakeholders on this email.

SPSB should prepare a few slides to show the basis and potential licensee challenge points for the preliminary finding, and also show how the significance characterization for this finding differs from an event evaluation under the reactor oversight process.

I propose that Region I, DE, and SPSB email their slides to the addressees on this email (at a minimum) by the Tuesday meeting if at all possible.

I have reserved HQ conference room O-8B6 for HQ conferees from 9:00 to 10:00am 22 Aug. I'll mention this effort on today's regional/HQ DD conference call.

Doug

>>> Marsha Gamberoni 08/18 9:33 AM >>>

Agenda and assignments for TA brief.

I spoke to Doug Coe this morning and he is coordinating the TA brief. He stated that he would like to get together early next week to finalize the Agenda/presentation information. He will be looking for slides before or by that time.

I asked DE to attend the communication call this morning and we talked thru an Agenda and assignments. The following is what we came up with:

IP2 Event - Region (Have slides from ACRS brief preps available)

**From:** David Lew  
**To:** Wayne Schmidt  
**Date:** Fri, Aug 18, 2000 1:07 PM  
**Subject:** Fwd: IP Slides

**From:** Raymond Lorson  
**To:** David Lew  
**Date:** Fri, Aug 18, 2000 9:55 AM  
**Subject:** Fwd: IP Slides

Dave:

The attached slides were used for the "Events Assessment Briefing". The content is virtually identical to what was presented at the Public Exit Meeting following the AIT. The slides used for the public exit meeting were attached to the report which is available in adams.

Ray

**From:** Eric Benner  
**To:** Lawrence Doerflein, Raymond Lorson  
**Date:** Tue, Aug 8, 2000 2:51 PM  
**Subject:** IP Slides

Ray/Larry,

In case you didn't sthave them, here are the slides that Ray used for the Operating Reactors Events Brief.

Eric

**CC:** Edward Goodwin

**INDIAN POINT, UNIT 2**

**Steam Generator Tube Failure (AIT)**

**February 15, 2000**

**CONTACTS**

**Region I: Ray Lorson, Team Leader (603-474-3589)**

**NRR: Eric Benner (301-415-1171)**

# INTRODUCTION AND BACKGROUND

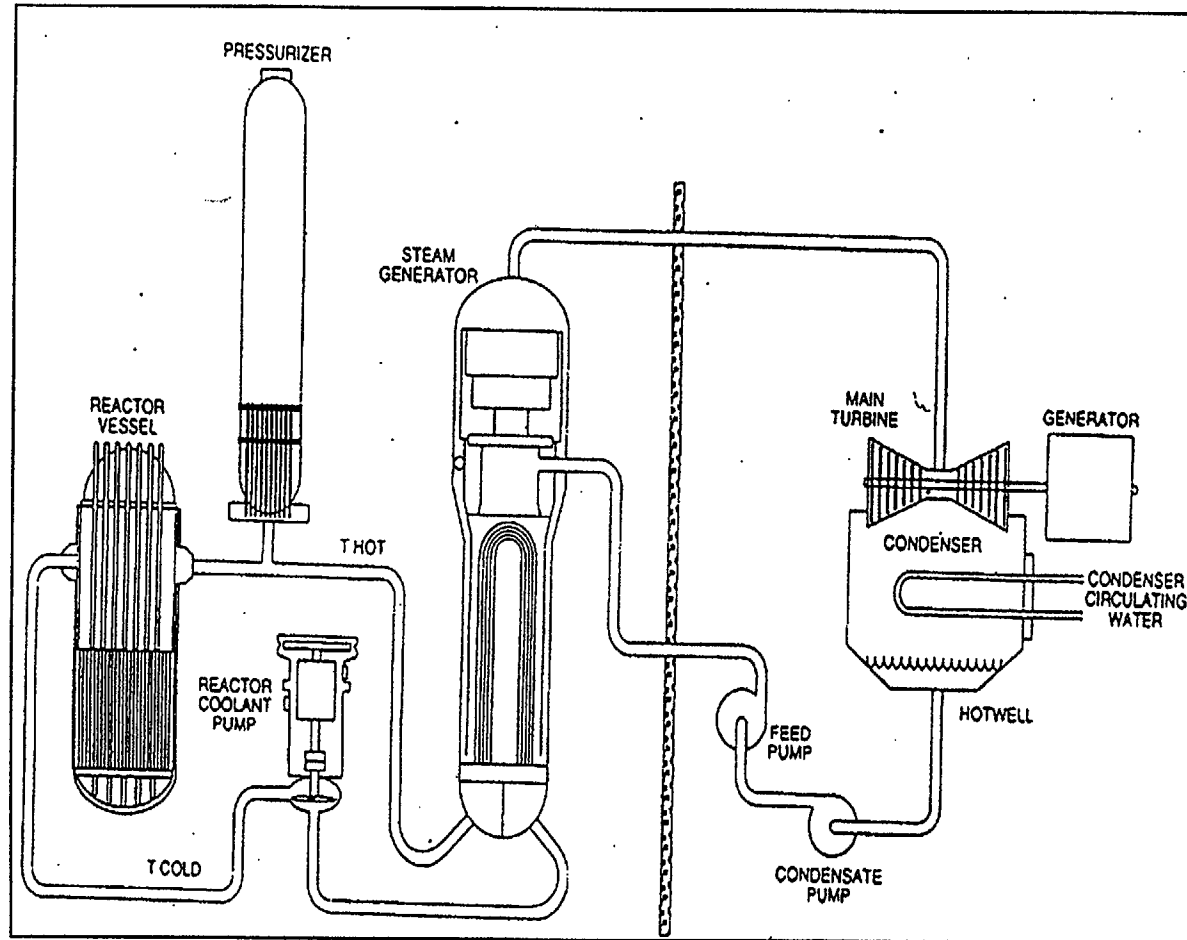
- Establishment of the Augmented Inspection Team (AIT)
- Purpose of an AIT
- Review of Team Charter, Including Team Membership
  - Cause of the Steam Generator (SG) Tube Failure - Separate NRC Review

# AIT TEAM CHARTER

- Develop Sequence of Events
- Review Operator Performance
- Review Equipment Performance
- Plant Risk
- Radiological Assessment
- Emergency Response Organization
- Review SG History
  - Cause of Tube Failure Under Separate NRC Review



# SYSTEM DIAGRAM



# OVERVIEW

- Initial Response Prompt/Appropriate
- No Offsite Radiological Impact
- Licensee Successful in Achieving Cold Shutdown
- Several Operator Performance/Procedural/Equipment Issues Identified Which Delayed Achieving Cold Shutdown Conditions
- Several Emergency Response Problems
- No Impact on Public Health and Safety

# AIT FINDINGS

- Sequence of Events
- Steam Generator Monitoring
- Operator Performance
- Procedure Quality
- Equipment Performance
- Emergency Response
- Radiological Assessment
- Safety Significance

# SEQUENCE OF EVENTS

## February 15, 2000

- 7:17 p.m. -- Operators Identified Increased SG Leak
- 7:29 p.m. -- Declared Alert
- 7:30 p.m. -- Tripped Reactor
- 7:41 p.m. -- State/County Officials Notified
- 8:31 p.m. -- Isolated Affected SG
- 9:02 p.m. -- Operators Initiated Plant Cooldown
- 9:04 p.m. -- Manually Initiated Safety Injection
- 11:38 p.m. -- Tube Leak Stopped

## February 16, 2000

- 12:39 p.m. -- Shutdown Cooling System
- 4:57 p.m. -- Achieved Cold Shutdown
- 6:50 p.m. -- Terminated Alert

# STEAM GENERATOR MONITORING

- SG Tube Leakage Monitored During Cycle
- Pre-Event Leak Monitoring Actions Appropriate
  - Shift Monitoring of Tube Leakage
  - Operator Review of Tube Leak Procedure
- Secondary Chemistry Acceptable

# OPERATOR PERFORMANCE

- Initial Response Prompt and Appropriate; Procedure Adherence Good Overall
  
- Some Deficiencies in the Plant Cooldown Phase
  - Initial Cooldown Excessive
  - Operator Recognition of Plant Configuration

# PROCEDURE QUALITY

- Procedures (AOPs/EOPs) to Guide Initial Response were Good
- Several Procedural Deficiencies Challenged Operators During the Plant Cooldown Phase
  - Delayed Placing Shutdown Cooling In-Service
  - System Configuration
  - Shutdown Conditions

# EQUIPMENT PERFORMANCE

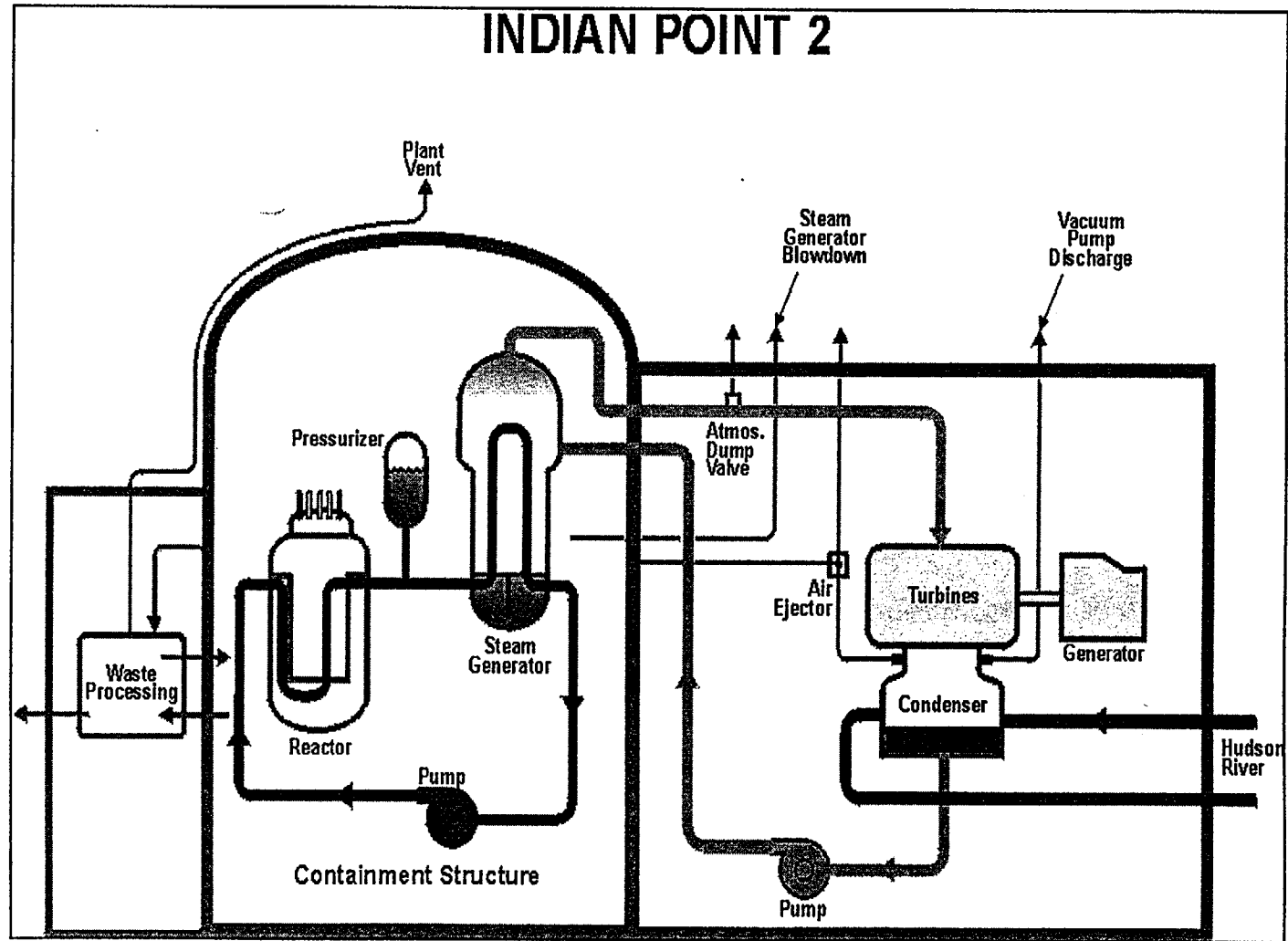
- Event Mitigation Systems Worked Properly
  - Reactor Protection System
  - Auxiliary Feedwater System
  - Safety Injection System
  
- Some Pre-existing Equipment Problems Challenged Operators
  - SG Leak Rate Trend Recorder
  - Automatic Condenser Vacuum Control Valve
  - Condenser Mechanical Vacuum Pump
  - Containment Valve Seal Water System Design Problem
  - Pressurizer Power Operated Relief Valve Design Problem



# EMERGENCY RESPONSE

- Emergency Response Protected Health and Safety of Public
- Event Classified Properly/Good Critique of Emergency Response
  
- Emergency Plan/Implementing Procedure Problems
  - Augmented Emergency Response Facility Staffing Not Timely
  - Accountability Problems
  - Emergency Response Data System (ERDS) not Operable for Several Hours (Pre-Existing Problem)
  - Problems in Implementation of the Media Response Plan
  - Emergency Response Facility Equipment Problems
  - Technical Support Timeliness and Quality Issues

# RADIOLOGICAL RELEASE PATHS



# **RADIOLOGICAL ASSESSMENT**

- Off-site Monitoring Good
- No Radioactivity Detected
- Conclusion - No Radiological Impact

# POTENTIAL RADIOLOGICAL EFFECT

- Conservative; Bounding Calculation
- Any Releases Small Fraction of Allowable Limits

	<u>Calculated Event Release</u>	<u>Background</u>	<u>Licensee Limit</u>	<u>% of Licensee Limit</u>
Gas	~.01 mrem	~ 300 - 400 mrem/year	10 mrem/yr (Total Body Gamma Air Dose)	0.1%
Liquid	~.0009 mrem		3 mrem/yr (Total Body)	0.03%

# **SAFETY SIGNIFICANCE**

## ■ Event Consequences

- No Measurable Radioactivity Offsite Above Normal Background
- There were no Consequences to Public Health and Safety

## ■ Risk Perspective

- Analyzed to Determine Necessary Licensee and NRC Response
- Some Increase in Calculated Risk