UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

July 31, 2003

James J. Sheppard, President and
Chief Executive Officer
STP Nuclear Operating Company
P.O. Box 289
Wadsworth, Texas 77483

SUBJECT: SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNIT 1 - SUMMARY OF EXIT MEETING FOR SPECIAL INSPECTION OF BOTTOM MOUNTED INSTRUMENTATION NOZZLE LEAKAGE IN SOUTH TEXAS PROJECT, UNIT 1 (NRC INSPECTION REPORT 05000498/2003008)

Dear Mr. Sheppard:

This refers to the public exit meeting conducted at the Civic Center in Bay City, Texas, on July 28, 2003, between your staff and the NRC. The participants discussed the results of the special inspection conducted between May 5 and July 28, 2003. The final inspection results will be available in NRC Inspection Report 05000498/2003008 within 30 days. Additionally, your staff presented the status of your root cause assessment, repairs made, readiness for restart of Unit 1, and plans for future condition monitoring in both units.

The list of attendees is enclosed with this summary (Enclosure 1). Copies of the NRC presentation slides and your staff's presentation slides are also enclosed (Enclosures 2 and 3).

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Anthony T. Gody, Acting Director
Division of Reactor Safety

Docket: 50-498;
License: NPF-76

Enclosures:
1. Attendance List

2. NRC Presentation
3. Licensee Presentation

cc w/enclosures:
Tom Jordan, Vice President
Engineering & Technical Services
STP Nuclear Operating Company
P.O. Box 289
Wadsworth, Texas 77483

S. M. Head, Manager, Licensing
Nuclear Quality & Licensing Department
STP Nuclear Operating Company
P.O. Box 289, Mail Code: N5014
Wadsworth, Texas 77483

A. Ramirez/C. M. Canady
City of Austin
Electric Utility Department
721 Barton Springs Road
Austin, Texas 78704

L. D. Blaylock/W. C. Gunst
City Public Service Board
P.O. Box 1771
San Antonio, Texas 78296

D. G. Tees/R. L. Balcom
Houston Lighting & Power Company
P.O. Box 1700
Houston, Texas 77251

Jon C. Wood
Matthews & Branscomb
112 E. Pecan, Suite 1100
San Antonio, Texas 78205

A. H. Gutterman, Esq.
Morgan, Lewis & Bockius
1111 Pennsylvania Avenue NW
Washington, DC 20004

C. A. Johnson/A. C. Bakken
AEP Texas Central Company
P.O. Box 289, Mail Code: N5022
Wadsworth, Texas 77483

INPO
Records Center
700 Galleria Parkway
Atlanta, Georgia 30339-5957

Director, Division of Compliance
& Inspection
Bureau of Radiation Control
Texas Department of Health
1100 West 49th Street
Austin, Texas 78756

Brian Almon
Public Utility Commission
William B. Travis Building
P.O. Box 13326
1701 North Congress Avenue
Austin, Texas 78701-3326

Environmental and Natural
Resources Policy Director
P.O. Box 12428
Austin, Texas 78711-3189

Judge, Matagorda County
Matagorda County Courthouse
1700 Seventh Street
Bay City, Texas 77414

Terry Parks, Chief Inspector
Texas Department of Licensing
and Regulation
Boiler Program
P.O. Box 12157
Austin, Texas 78711

Susan M. Jablonski
Office of Permitting, Remediation and Registration
Texas Commission on Environmental Quality
MC-122, P.O. Box 13087
Austin, Texas 78711-3087

Ted Enos
4200 South Hulen
Suite 630
Fort Worth, Texas 76109

Electronic distribution by RIV:
Acting Regional Administrator **(TPG)**
DRP Director **(ATH)**
Acting DRS Director **(ATG)**
Senior Resident Inspector **(GLG)**
Branch Chief, DRP/A **(WDJ)**
Senior Project Engineer, DRP/A **(TRF)**
Staff Chief, DRP/TSS **(PHH)**
RITS Coordinator **(NBH)**
Mel Fields **(MBF1)**
STP Site Secretary **(LAR)**

ADAMS: G √ **Yes** **G** No Initials: ____
G √ **Publicly Available** **G** Non-Publicly Available **G** Sensitive G √ **Non-Sensitive**

R:_STP\2003\ST7-28-03MS-DRS.wpd

RIV:EMB	SRA/TL	D:DRS		
NFO'Keefe	RLBywater	ATGody		
/RA/	***/RA/***	***/RA/***		
07/30/03	07/31/03	07/31/03		

OFFICIAL RECORD COPY T=Telephone E=E-mail F=Fax

ENCLOSURE 1

MEETING ATTENDANCE LIST

Attendance Sheet

NRC Public Exit Meeting
Special Inspection for Bottom Mounted Instrument Tube Leaks
July 28, 2003

Name:	Organization:	Name:	Organization:
1. Wayne S[illegible]	US NRC	15. [illegible]	STPNOC
2. Wayne Harrison	STPNOC	16. David Rencurrel	STPNOC
3. Steve Thomas	STPNOC	17. Bill Gurst	City Public Service
4. Chris Anderson	Express-News	18. Larry Blaylock	City Public Service
5. Matt Daily	Reuters	19. [illegible]	MC[illegible] STP
6. Peter Strubhar	Framatome ANP	20. [illegible]	STPNOC
7. Frank Mallen	STPNOC	21. George Meyer	Westinghouse
8. Basel Djazmati	Framatome ANP	22. GARY MIGLOGNA	FRAMATOME ANP
9. Ron Dorman	Framatome ANP	23. JOHN CONLY	STPNOC
10. BOB [illegible]	FRAMATOME ANP	24. LURINDA BARTON	STP
11. Rob Smith	Framatome-ANP	25. BOB WATTS	MATAGORDA County
12. Doug KILLIAN	Framatome-ANP	26. JERRY GRUOMS	" " ED
13. Robert Cole	FRAMATOME-ANP	27. Mary B Johnston	Public Relations
14. Harry Murray	STPNOC	28.	
Michael Loshley	STPNOC	[illegible]	[illegible]
James Heil	STPNOC	Dianna [illegible]	Ron Paul
R. WAYNE FRIEDA	MCSO	Russell Lovell	STPNOC
HARRY SHANNON	Port of Bay City		
ANUP KHOSLA	STPNOC		
W. WOOD	TRIBUNE		
K. SILVERTHORNE	STPNOC		
M. Baker	The Facts		

Attendance Sheet

NRC Public Exit Meeting
Special Inspection for Bottom Mounted Instrument Tube Leaks
July 28, 2003

Name:	Organization:	Name:	Organization:
1. Neil O'Keefe	US NRC	15. Charlotte Tucker	P Corp C
2. Mark McBurnett	STPNOC	16. Kenneth Coyne	STP
3. Paul Serra	STPNOC	17. Chet Mfintyre	STP
4. Matthew A. Mitchell	USNRC	18. Richard Balcom	Texas Genco, LP
5. HERB BERKOW	USNRC	19. Bobby Wilkinson	MCEDC
6. DAVE JAFFE	USNRC	20. Bob Allen	Public
7. BOB GRAHM	USNRC	21. Bill Humble	STPNOC
8. ALAN MIKUS	STP NOC	22. Chris Johnson	AEP TEXAS CENTRAL
9. TJ JORDAN	STPNOC	23. Roy C Craft	C.H.P.
10. GARY PARKER	STPNOC	24. Mistie Household	Matagorda County Advocate
11. Joe Sheppard	STPNOC	25. John Groth	Palacios TX
12. MIKE MEIER	STPNOC	26. Joan Groth	Palacios TX
13. Bill Cottle	PUBLIC	27. Everett Dugger	STP
14. Dan Salter	Public	28. [illegible]	Matco.

ENCLOSURE 2

NRC PRESENTATION SLIDES

U.S. NUCLEAR REGULATORY COMMISSION

Special Inspection Team Exit Meeting

Bottom Mounted Instrumentation Leakage Issue

South Texas Project Unit 1

July 28, 2003

Agenda

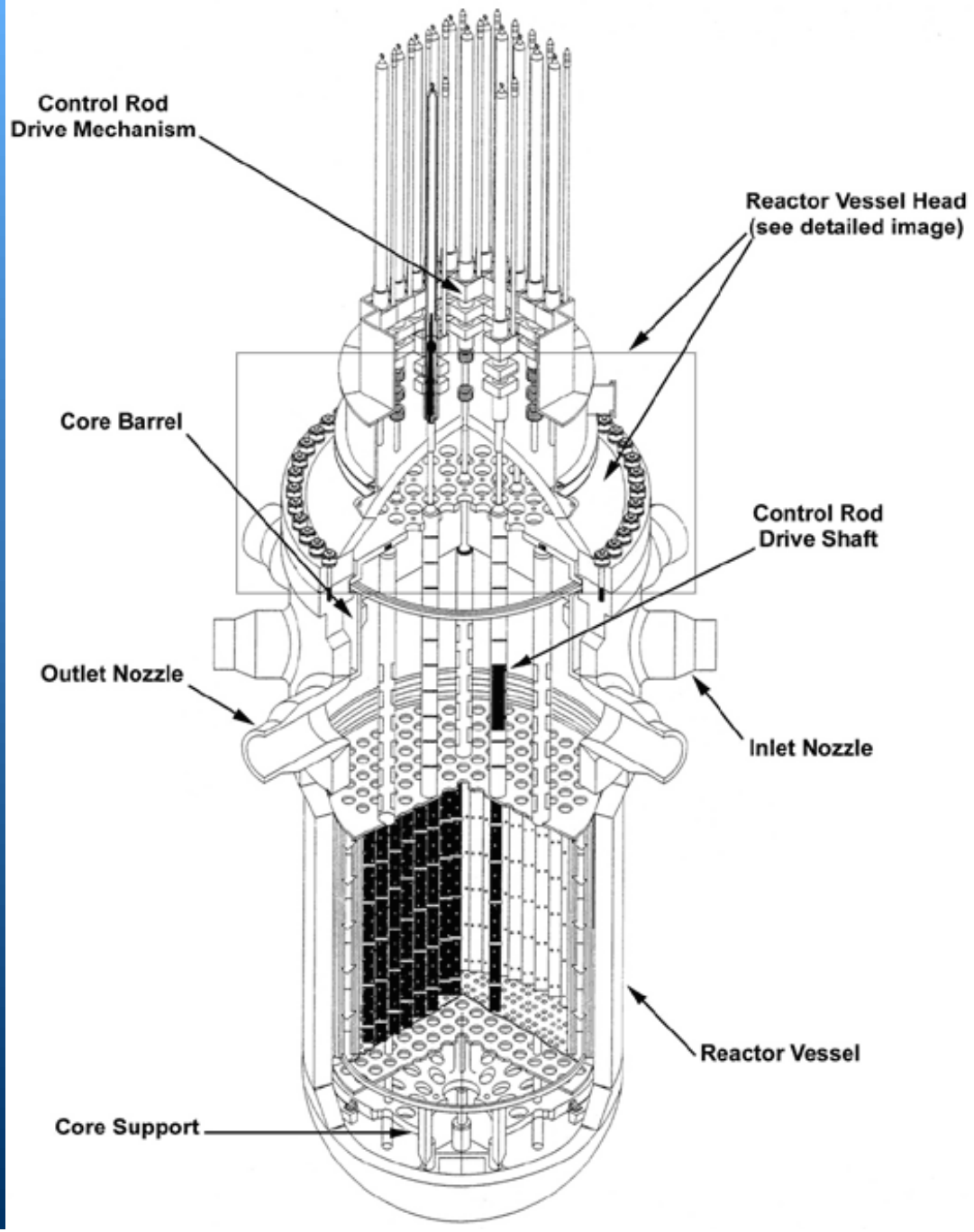
- Purpose of Meeting and Introductory Remarks
- Introduction of NRC Personnel
- Introduction of STPNOC Personnel
- STPNOC Presentation
- NRC Exit Presentation
- Concluding Remarks
- Public Comment

NRC Special Inspection Team

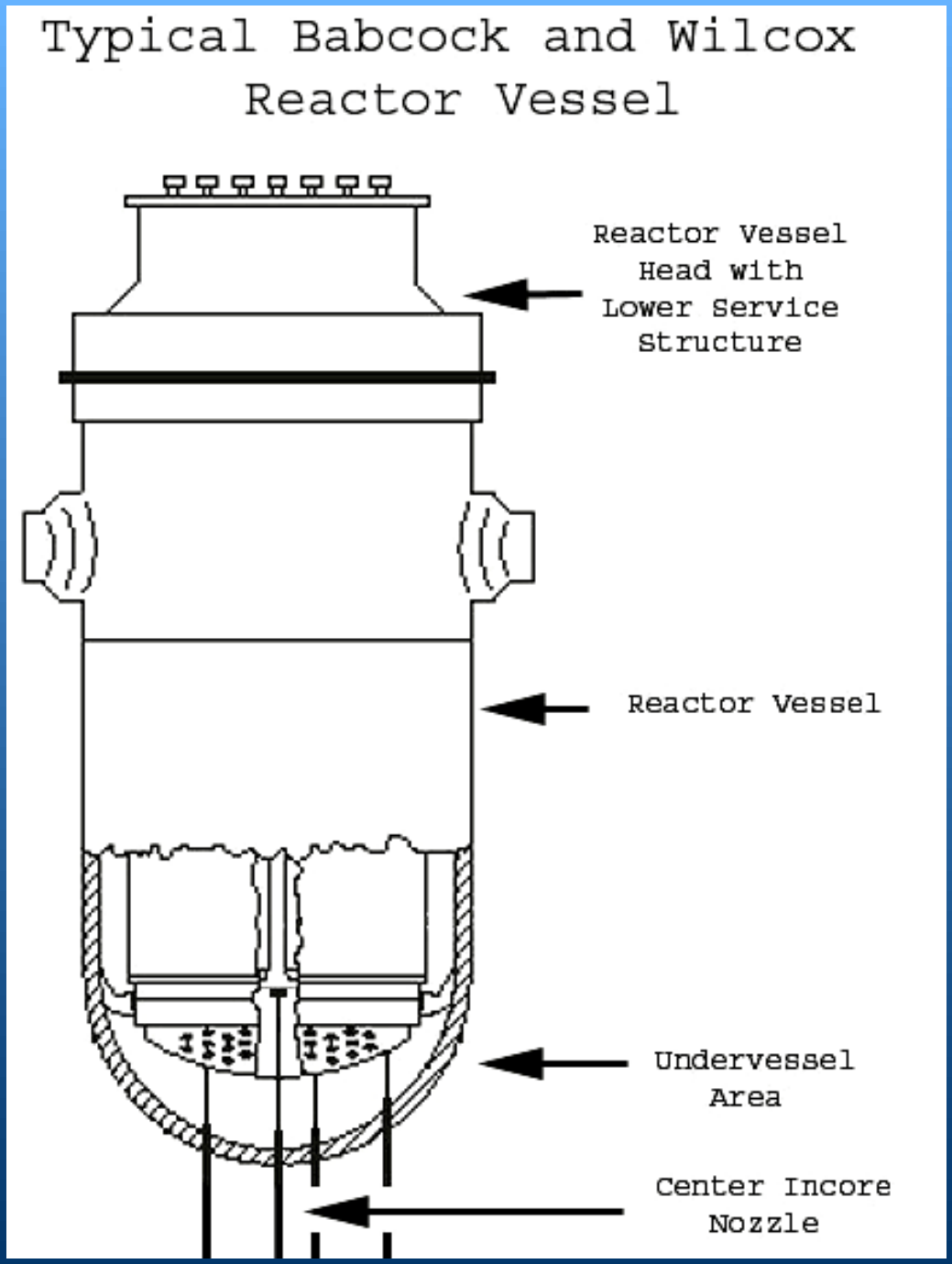
Chartered to Review STP Unit 1 BMI Leakage Issue

- Russ Bywater, Senior Reactor Analyst, Region IV, Team Leader
- Neil O'keefe, Senior Reactor Inspector, Region IV
- Wayne Sifre, Reactor Inspector, Region IV
- Matthew Mitchell, Senior Materials Engineer, NRR
- Mike Runyan, Senior Reactor Analyst, Region IV
- Dr. Steve Doctor, Pacific Northwest National Laboratory

Typical Pressurized Water Reactor



Typical Babcock and Wilcox Reactor Vessel



Description of Issue and Chronology

- NRC Generic Letter 88-05
- NRC Bulletin 2001-01
- NRC Bulletin 2002-01
- STP Identification of BMI Leakage

Adequacy of Corrective Actions

- Examination Campaign
- Development and Implementation of Repairs
- Examination of Removed Samples
- Evaluation of Potential Root Causes
- Implementation of Continued Monitoring Program

Safety Significance of Issue

- Regulatory Requirements
- Assumptions Used in Analysis
- Preliminary Significance Determination

Acceptability of STP-1 Operation

- Examination Results
- BMI Nozzle Repair
- Continued Monitoring Program

Concluding Remarks

- STPNOC Response
- Public Comments
- NRC Concluding Comments

- For More Information:
  WWW.nrc.gov/reactors/operating/ops-experience/bottom-head-penetration-leakage.html

ENCLOSURE 3

STP PRESENTATION SLIDES

South Texas Project Unit 1

Bottom Mounted Instrument Penetration Condition Resolution

7/28/03

STP Participants

Joe Sheppard	President & CEO
Tom Jordan	VP, Engineering & Tech Services
Gary Parkey	VP, Generation
Ed Halpin	Plant General Manager


04/12/2003


04/12/2003

STP Used Worldwide Experts

External Support

Framatome ANP

Westinghouse - PCI

Dominion Engineering

Performance Improvement International

Exponent Failure Analysis Associates

V. C. Summer Nuclear Power Plant

Comanche Peak Steam Electric Station

Arkansas Nuclear One Power Plant

Japanese loanee to Institute of Nuclear Power Operations (INPO)

Electric Power Research Institute (EPRI)

Electricite de France

Tractabel (Belgium)

Harfang Industries

Altran

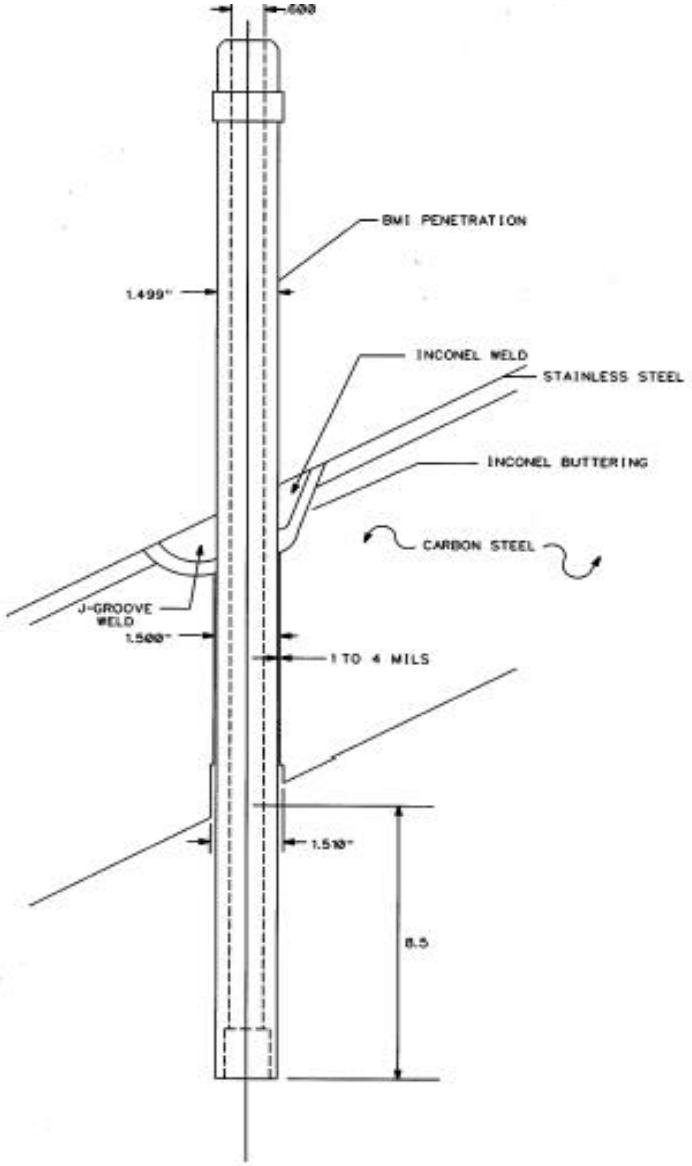
Full-Sized Mock-up at STP


EVANS HEACOCK

EXTENT of CONDITION, CAUSE, CORRECTIVE ACTION

Tom Jordan
Vice President,
Engineering & Technical Services

BMI Guide Tube Penetration

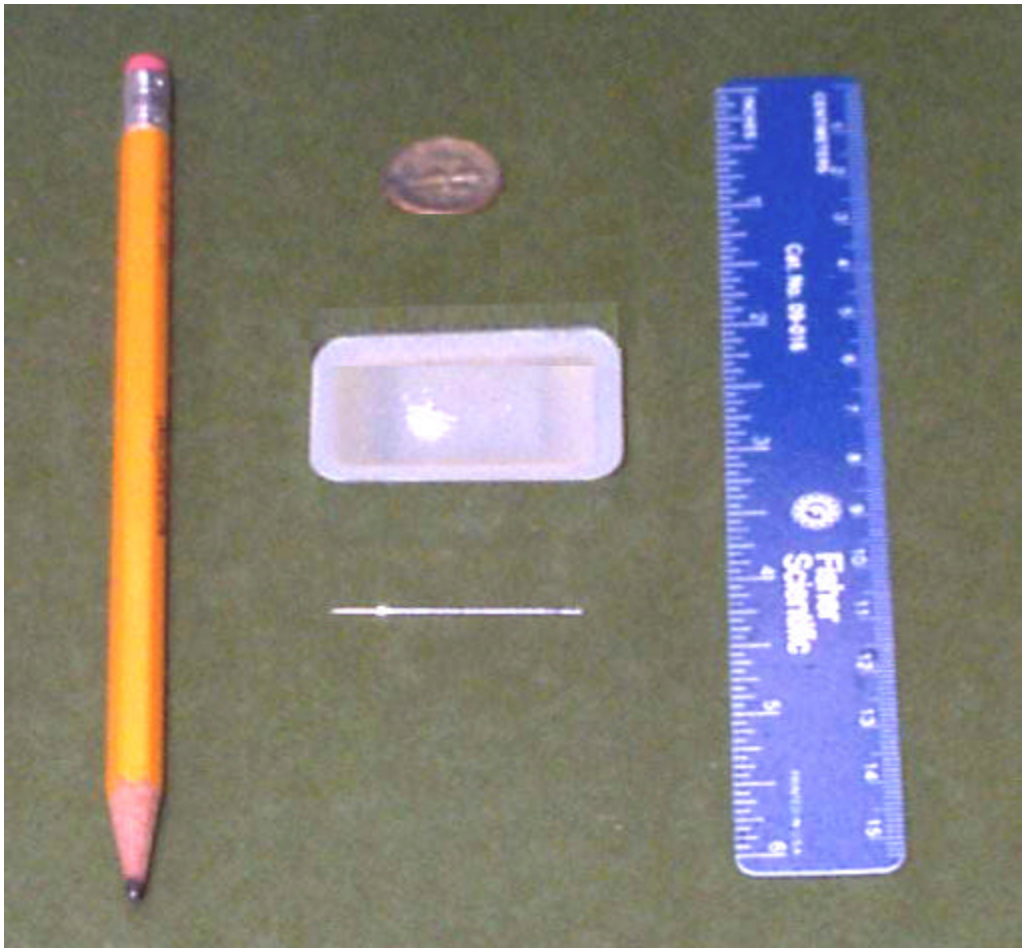


Our Inspection Process Works

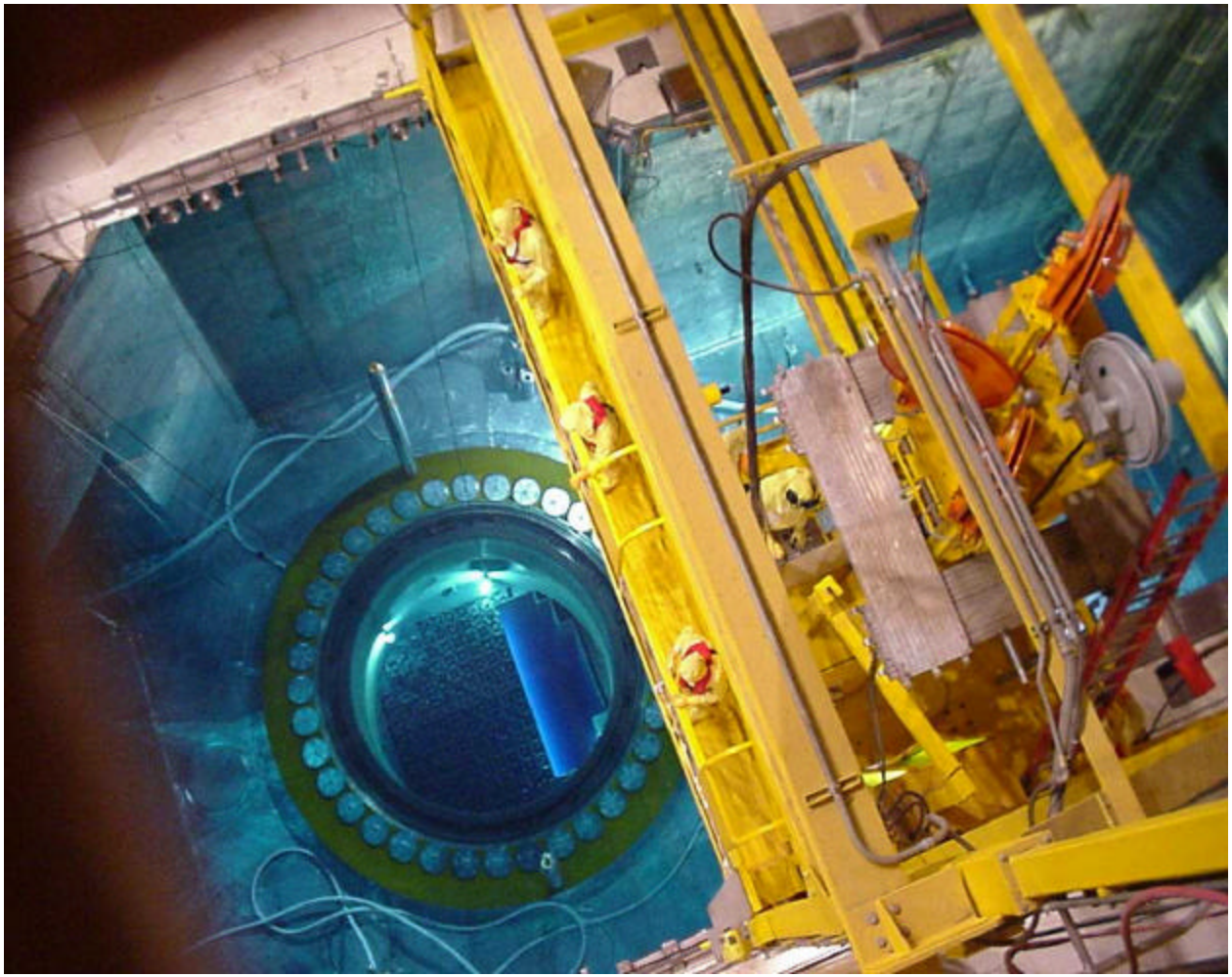
We inspect the exterior of our vessels every time we shutdown for a refueling outage. Previous inspections did not reveal indications of seepage.

Evidence of Very Small Leakage Found in Routine Inspection

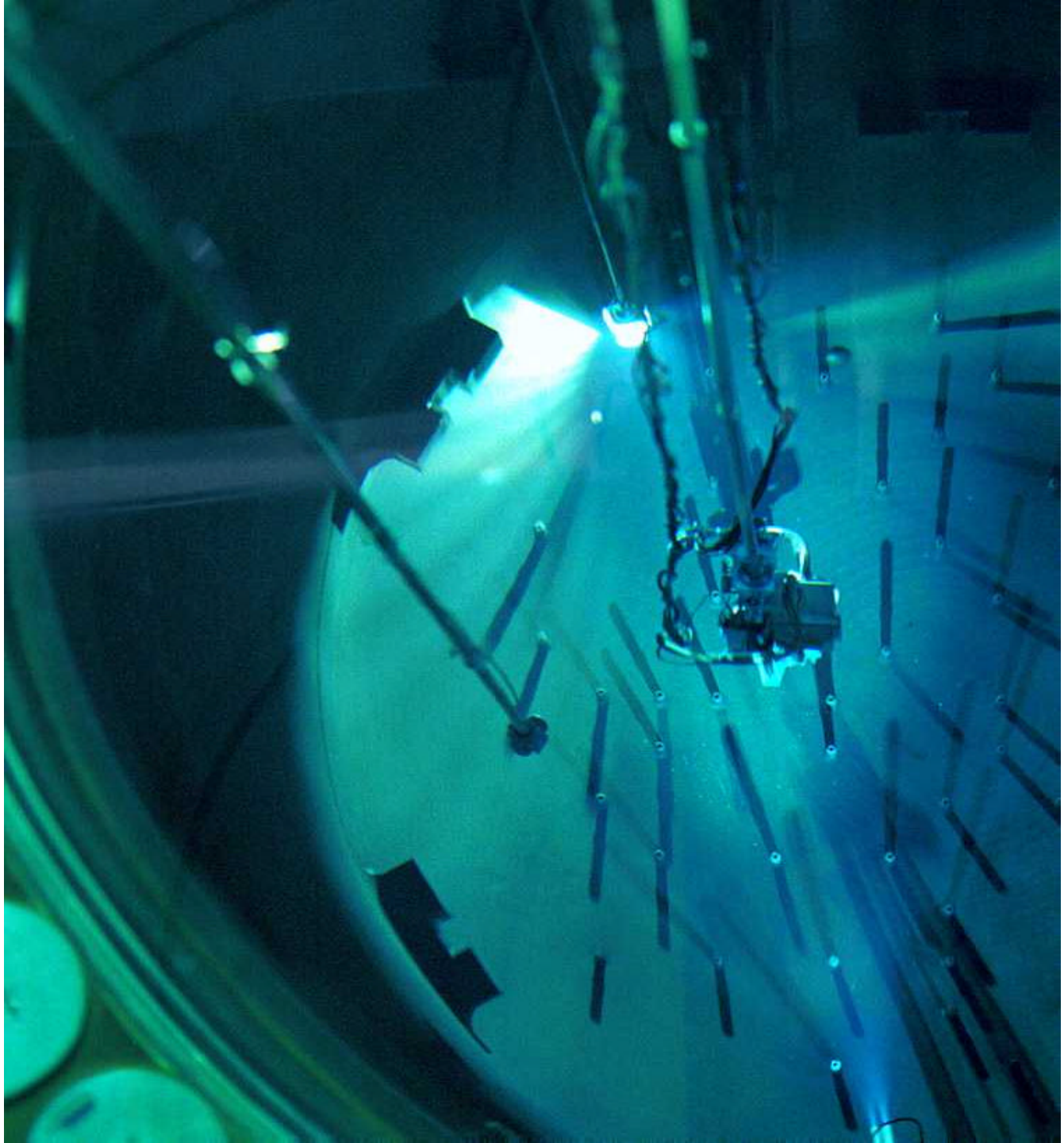
Actual Amount of Residue

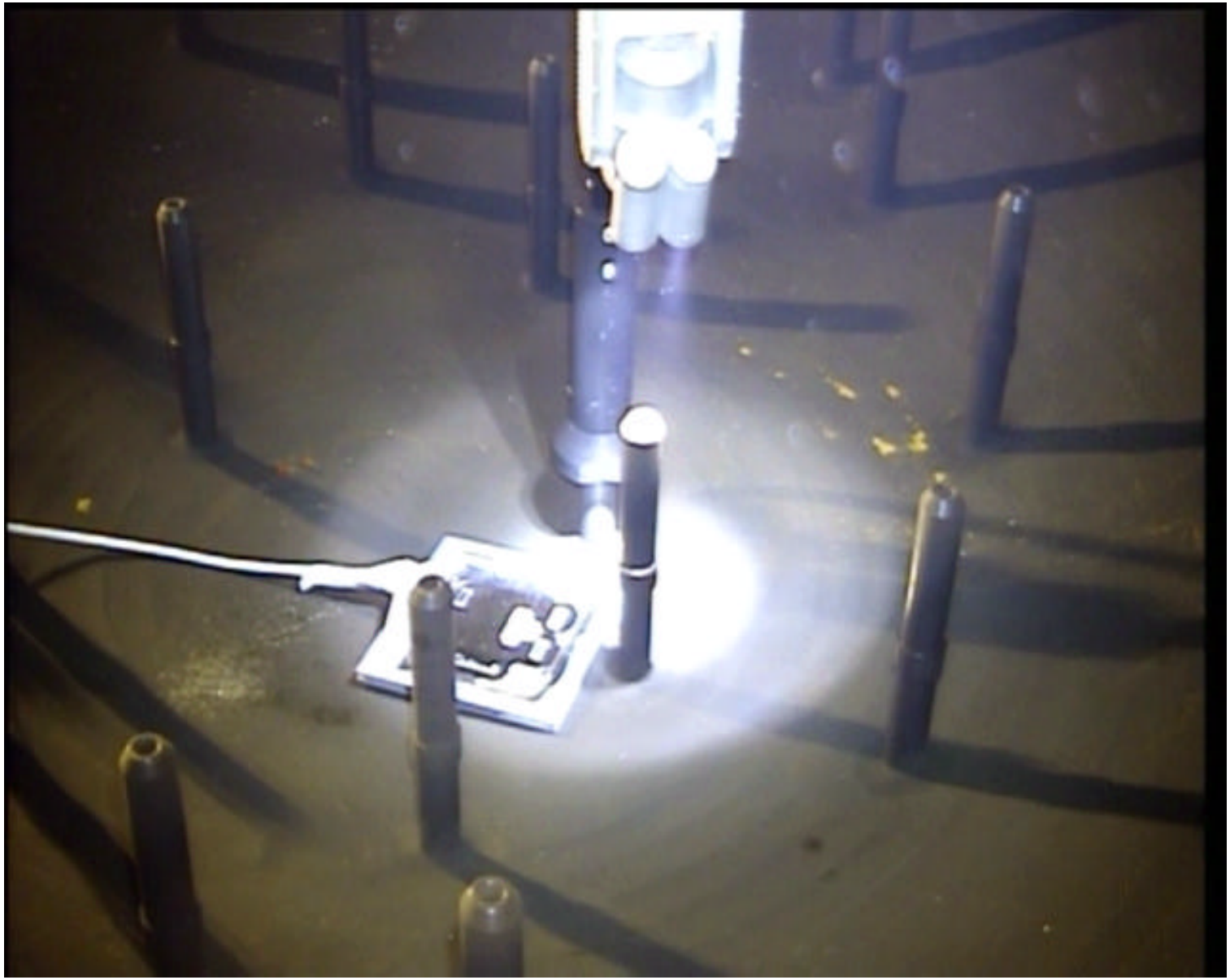


Looking Down into Reactor Cavity



Extensive NDE Using State-of-the-Art Techniques and the Most Experienced People in the World





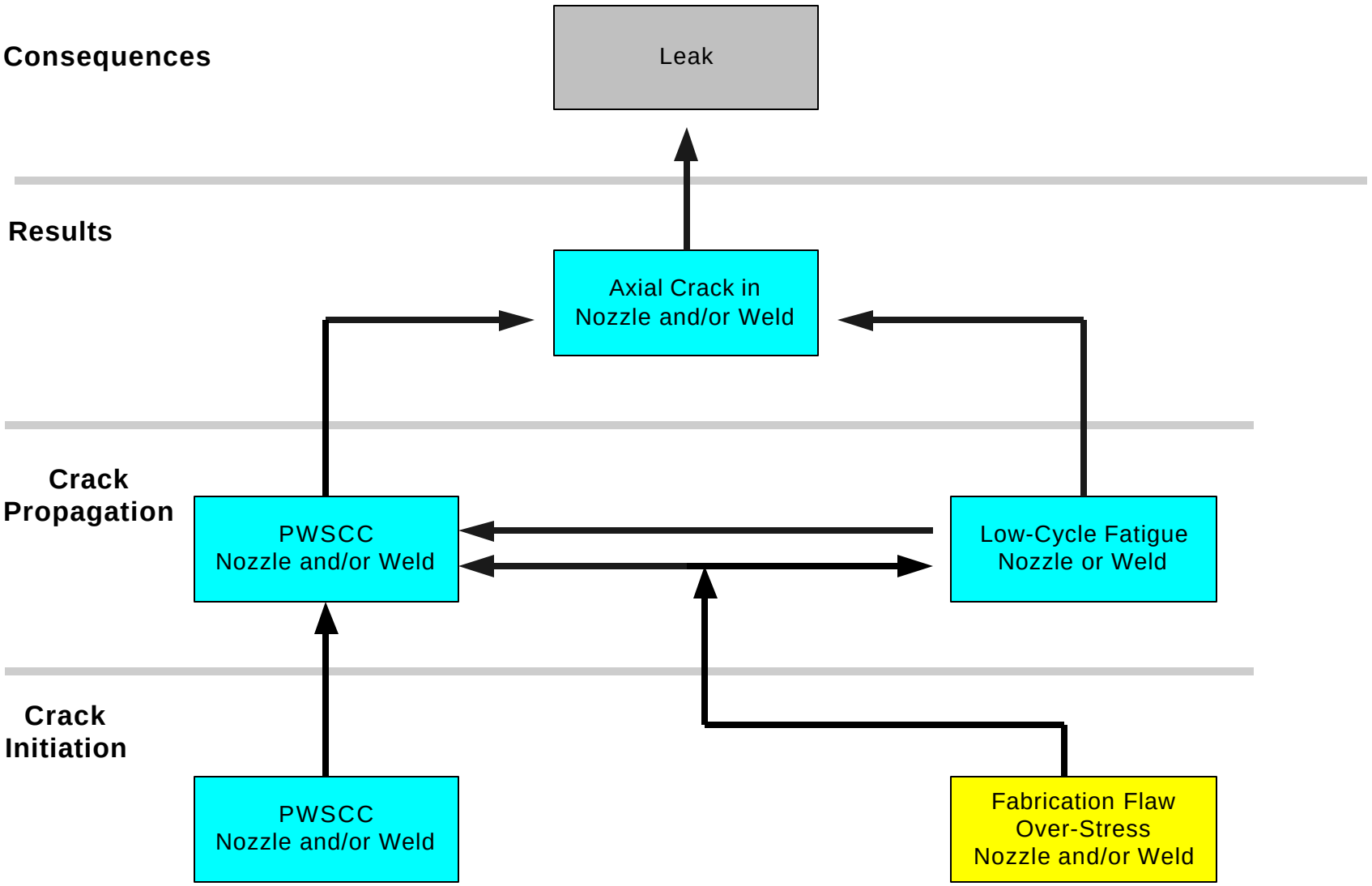
Examination Scope

- Ultrasonic examination (UT) from penetration tube ID
- Enhanced visual exam of J-groove weld surface
- Volumetrically interrogate vessel base metal for wastage
- Eddy current examination (ET) from penetration tube ID
- ET of J-groove weld surface
- Profilometry [tube inside roundness / ovality]
- Borescope [tube inside visual] examinations
- Helium tests
- Metallurgical analyses of removed nozzle remnants
- Boat sample analyses

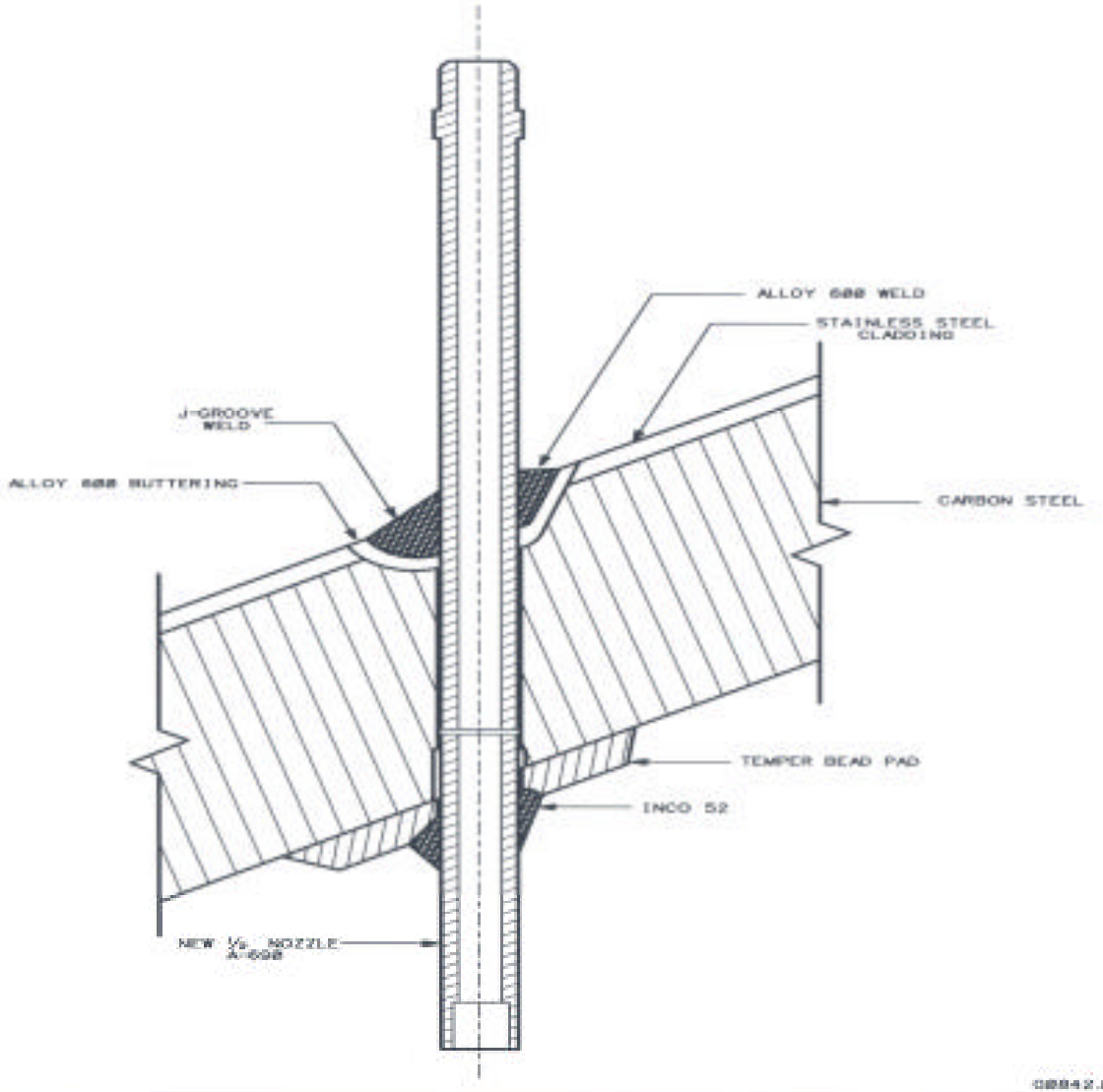
Examination Results

- Penetration #1
  - Three axial indications, one leak path
- Penetration #46
  - Two axial indications, one leak path

Investigation Results



Permanent Half-Nozzle Repair



Completed Repair

Condition Limited to the Two Identified Nozzles

- Routine inspection identified very low leakage
- Extensive NDE confirmed condition limited to two penetrations
  - Axial cracks in tubes
  - No wastage
- Substantial safety margin existed
- Repairs are complete
- Monitoring / inspection plan developed

MONITORING / INSPECTION PLAN and RETURN to SERVICE

Ed Halpin

Plant General Manager

Monitoring / Inspection Plan Confirms Effective Corrective Action

- Continue bare metal visual inspections under boric acid control program
- Perform UT and EVT of penetrations at next Unit 1 vessel inservice inspection
- Perform periodic UT of vessel base material around repaired penetrations
- Perform volumetric examination of Unit 2 penetrations at next refueling outage with core barrel removal
- Online monitoring plan developed

Outage Philosophy

Three-phase outage approach for long-term focus on nuclear safety and reliability

- Phase One: Discovery
- Phase Two: Repair
- Phase Three: Return to Service

Return to Service

- Plant readiness
  - Comprehensive communications plan
  - PORC reviewed selected activities
  - Just-in-time training for plant operators
  - Weekly plant walkdowns with key station management to assess readiness
  - Increase in staff and manning onshift
  - Specific readiness reviews including
    - Integrated schedule review
    - Refuel project readiness review
    - Secondary plant startup review

Return to Service (cont'd)