



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 18, 2013

LICENSEE: Arizona Public Service Company

FACILITY: Palo Verde Nuclear Generating Station, Unit 3

SUBJECT: SUMMARY OF NOVEMBER 4, 2013, PUBLIC MEETING WITH ARIZONA PUBLIC SERVICE COMPANY TO DISCUSS THE CURRENT STATUS OF THE NON-DESTRUCTIVE EXAMINATION EFFORTS, REPAIRS, AND PROGRESS ON THE ROOT CAUSE DETERMINATION INVOLVING REACTOR COOLANT SYSTEM PRESSURE BOUNDARY LEAKAGE ON THE BOTTOM MOUNTED INSTRUMENTATION NOZZLES (TAC NO. MF2922)

On November 4, 2013, a Category 1 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Arizona Public Service Company (APS, the licensee) at NRC Headquarters, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland. The purpose of the meeting was to discuss the current status of the non-destructive examination (NDE) efforts, repairs, and progress on the root cause determination involving reactor coolant system pressure boundary leakage identified during visual inspections on the reactor vessel bottom mounted instrumentation (BMI) nozzles at Palo Verde Nuclear Generating Station, Unit 3. The meeting notice and agenda are publicly available in the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML13294A373. The licensee's meeting slide presentation is available at ADAMS Accession No. ML13308B332. A list of attendees is provided in the Enclosure.

APS representatives described its initial discovery and response to the leakage on the BMI nozzles, the NDE action plan and results, the causal evaluation, the repair plan, and the proposed relief requests. APS's NDE efforts concluded that BMI nozzle #3 was the only visually leaking nozzle and that there are multiple axial ultrasonic indications. The licensee stated that other 60 BMI nozzles did not have any unacceptable indications. The licensee's causal evaluation determined the probable cause of crack initiation likely occurred at a weld defect that was exposed to the primary water environment resulting in primary water stress-corrosion cracking (PWSCC). The licensee plans to perform a boat sample and metallurgical analysis and testing to confirm the probable cause. The licensee noted that the boat sample is expected to be performed on approximately November 7, 2013. In addition, the licensee described the qualification and performance of the half-nozzle repair which is estimated to be completed on approximately November 7, 2013. Lastly, the licensee discussed two proposed relief requests pursuant to paragraph 50.55a(a)(3)(i) of Title 10 of the *Code of Federal Regulations* that are being developed. The first proposed relief request will be submitted and request relief from sections of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) for the duration of one operating cycle. The licensee stated that authorization for this relief request will be needed prior to entering MODE 2, which is estimated to occur on approximately November 24, 2013. The second relief request will include more detailed analysis including fatigue crack growth and request relief from certain sections of the ASME

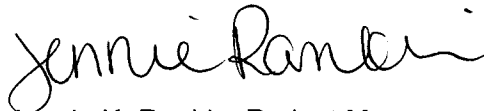
Code for operation beyond the next operating cycle. The licensee expects to submit this relief request in the April or May 2014 timeframe.

The NRC suggested that APS consider the following as it proceeds in the recovery efforts:

- Evaluate the need to harvest additional indications and additional weld material when collecting the boat sample or samples.
- Evaluate the need in the metallurgical analysis and test plan for using additional or different surface analytical techniques or other metallurgical analysis methods to characterize fracture or defect surfaces.
- Evaluate if a relief request is required to address ASME Code requirements for allowing flaws to remain in the nozzle.

No Public Meeting Feedback Forms were received for this meeting.

Please direct any inquiries to me at 301-415-1530 or at Jennivine.Rankin@nrc.gov.



Jennie K. Rankin, Project Manager
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-530

Enclosures:
List of Attendees

cc w/encl: Distribution via Listserv

LIST OF ATTENDEES

NOVEMBER 4, 2013, MEETING WITH ARIZONA PUBLIC SERVICE COMPANY REGARDING

PALO VERDE NUCLEAR GENERATING STATION, UNIT 3

BOTTOM MOUNTED INSTRUMENTATION LEAKAGE

DOCKET NO. 50-530

| <u>NAME</u> | <u>ORGANIZATION</u> |
|----------------------|--------------------------------|
| Dwight Mims | Arizona Public Service Company |
| Jack Cadogan | Arizona Public Service Company |
| Ron Barnes | Arizona Public Service Company |
| Ken House | Arizona Public Service Company |
| Mike McLaughlin | Arizona Public Service Company |
| Mark Fallon | Arizona Public Service Company |
| Tom Weber | Arizona Public Service Company |
| Mike DiLorenzo | Arizona Public Service Company |
| Brian Cable | Arizona Public Service Company |
| Doug Hansen | Arizona Public Service Company |
| Ed Fernandez | Arizona Public Service Company |
| Gene Montgomery | Arizona Public Service Company |
| Jacquelyn Koessel ** | Arizona Public Service Company |
| Robert Roehler ** | Arizona Public Service Company |
| Tom Hook ** | Arizona Public Service Company |
| R. C. Foley ** | Arizona Public Service Company |
| Mark McGhee ** | Arizona Public Service Company |
| Michael Hooshmand ** | Arizona Public Service Company |
| Dominic Macedonia ** | Arizona Public Service Company |
| Mike Powlikosky ** | Arizona Public Service Company |
| Sabrina Ireland ** | Arizona Public Service Company |
| Chris Wax ** | Arizona Public Service Company |
| Paul Hom ** | Arizona Public Service Company |
| Jenny Tolar ** | Arizona Public Service Company |
| Jennifer Cox ** | Arizona Public Service Company |
| Winston Borrero ** | Arizona Public Service Company |
| Doug Berg ** | Arizona Public Service Company |
| Delbert Elkinton ** | Arizona Public Service Company |
| Donald Buth ** | Arizona Public Service Company |
| David Medek ** | Arizona Public Service Company |
| Maria Lacal ** | Arizona Public Service Company |
| Mark Radspinner ** | Arizona Public Service Company |
| Don Wheeler ** | Arizona Public Service Company |
| Scott Bauer *** | STARS |
| Dave Waskey *** | AREVA |
| Doug Killian *** | AREVA |

Enclosure

| <u>NAME</u> | <u>ORGANIZATION</u> |
|---------------------|---------------------------------------|
| Michael Lashley *** | Structural Integrity Associates, Inc. |
| James Axline * | Structural Integrity Associates, Inc. |
| Chris Lohse * | Structural Integrity Associates, Inc. |
| Anthony Giannuzzi * | Structural Integrity Associates, Inc. |
| Bud Auvil * | Structural Integrity Associates, Inc. |
| Paul Sullivan * | Structural Integrity Associates, Inc. |
| Ron Payne * | WSI/AZZ |
| Nick Pappas | NEI |
| Bernie Rudell | CENG |
| Jim Cirilli | Exelon |
| Aubrey Godwin | Arizona Radiation Regulatory Agency |
| Akihiro Kanno | Hitachi – GE Nuclear Energy |
| James Clark * | GE – Hitachi Nuclear Energy |
| Kensaku Arai | JNES |
| Eric Shouse * | El Paso Electric Site |
| Suzuki Harutaka * | Mitsubishi Heavy Industries |
| Stephen Cumblidge | U.S. Nuclear Regulatory Commission |
| Robert Hardies | U.S. Nuclear Regulatory Commission |
| John Tsao | U.S. Nuclear Regulatory Commission |
| Jay Collins | U.S. Nuclear Regulatory Commission |
| Dan Widrevitz | U.S. Nuclear Regulatory Commission |
| Jennie Rankin | U.S. Nuclear Regulatory Commission |
| Kyle Hanley | U.S. Nuclear Regulatory Commission |
| Iouri Prokofiev | U.S. Nuclear Regulatory Commission |
| Carol Nove | U.S. Nuclear Regulatory Commission |
| Mike Markley | U.S. Nuclear Regulatory Commission |
| Joel Jenkins | U.S. Nuclear Regulatory Commission |
| Jay Wallace | U.S. Nuclear Regulatory Commission |
| Dave Rudland | U.S. Nuclear Regulatory Commission |
| Dave McIntyre | U.S. Nuclear Regulatory Commission |
| Stacey Rosenberg | U.S. Nuclear Regulatory Commission |
| Simon Sheng | U.S. Nuclear Regulatory Commission |
| Ganesh Cheruvenki | U.S. Nuclear Regulatory Commission |
| David Terao | U.S. Nuclear Regulatory Commission |
| Steven Downey | U.S. Nuclear Regulatory Commission |
| Tony Brown * | U.S. Nuclear Regulatory Commission |
| James Drake * | U.S. Nuclear Regulatory Commission |

* participated via telephone

** participated via telephone and represented APS

*** represented APS

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/RA/

Jennie K. Rankin, Project Manager
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-530

Enclosures:
List of Attendees

cc w/encl: Distribution via Listserv

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ADAMS Accession Nos. Meeting Notice ML13294A373; Meeting Summary ML13311B183;
Slides ML13308B332 * via email

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|--------|--------------------|--------------------|--------------|----------|
| OFFICE | NRR/DORL/LPL4-1/PM | NRR/DORL/LPL4-1/LA | NRR/DE/EPNB* | NRR/DE* |
| NAME | JRankin | JBurkhardt | JCollins | RHardies |
| DATE | 11/13/13 | 11/13/13 | 11/6/13 | 11/5/13 |
| OFFICE | NRR/DORL/LPL4-1/BC | NRR/DORL/LPL4-1/PM | | |
| NAME | MMarkley | JRankin | | |
| DATE | 11/15/13 | 11/18/13 | | |

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