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Ref: 10 CFR 50.54(f)

CPSES-200401808
Log # TXX-04140

July 27, 2004

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
60-DAY RESPONSE TO NRC BULLETIN 2004-01, "INSPECTION OF ALLOY 82/182/600 MATERIALS USED IN THE FABRICATION OF PRESSURIZER PENETRATIONS AND STEAM SPACE PIPING CONNECTIONS AT PRESSURIZED WATER REACTORS"

REF: NRC Bulletin 2004-01 "Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized Water Reactors," dated May 28, 2004

Gentlemen:

Attached is the 60-day response for Comanche Peak Units 1 and 2 to NRC Bulletin 2004-01, referenced. The Bulletin advised pressurized water reactor (PWR) addressees that current methods of inspecting Alloy 82/182/600 materials used in the fabrication of pressurizer penetrations and steam space piping connections may need to be supplemented with additional measures to detect and adequately characterize flaws due to primary water stress corrosion.

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The Bulletin requested information from all PWR addressees related to:

- the materials from which the pressurizer penetrations and steam space piping connections were fabricated, and

- inspections that have been or will be performed to ensure that degradation of Alloy 82/182/600 materials used in fabrication of pressurizer penetrations and steam space piping connections will be identified, adequately characterized, and repaired.

The Bulletin also required that a written response be submitted to the NRC in accordance with the provisions of 10 CFR 50.54(f).

This communication contains the following new commitments which will be completed as noted:

Commitment Number	Commitment
27318	Each identified location in the CPSES Unit 1 and 2 pressurizers with Alloy 82/182 weld materials will be bare metal visual inspected each refueling outage, including 100% of the circumference over the axial length of the welds, until effective PWSCC-mitigative actions are taken or a technically robust, industry recommended inspection regime is issued. It is anticipated that direct visual examination will be performed. In areas where direct visual examination is not feasible or where remote techniques will result in equivalent examinations with reduced dose received, remote visual examination equipment may be used to perform the examination. Personnel performing the examinations will be qualified per the requirements for personnel implementing the CPSES Boric Acid Corrosion Detection and Evaluation Program per station procedure STA-737. Any accumulations of boric acid residue on or around the weld areas will be investigated to determine the origin of the deposit. If through wall leakage is suspected or if through wall leakage would be masked by leakage from other components, additional NDE techniques such as ultrasonic, eddy current or radiographic techniques will be used to characterize any indications. Should additional NDE techniques be utilized for follow up examinations, personnel involved will be qualified in accordance with ASME Section XI, 1989 Edition or later approved Code editions, if there are qualification requirements applicable to the examination technique(s) employed. ASME Code requirements for evaluation and repair of any flaws detected will be

followed. These additional followup inspections will be documented on examination data sheets.

27319 TXU Power will provide the requested information within 60 days after plant restart following the next inspection of the Alloy 82/182 pressurizer penetrations and steam space piping connections for CPSES Units 1 and 2.

The Commitment number is used by TXU Generation Company LP (TXU Power) for the internal tracking of CPSES commitments.

If you have questions regarding this response, please contact Mr. J. D. Seawright at (254) 897-0140.

I state under penalty of perjury that the foregoing is true and correct.

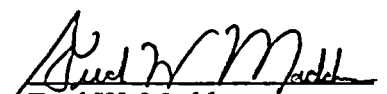
Executed on July 27, 2004.

Sincerely,

TXU Generation Company LP

By: TXU Generation Management Company LLC,
Its General Partner

Mike Blevins

By: 
Fred W. Madden
Regulatory Affairs Director

JDS
Attachment

c - B. S. Mallett, Region IV
W. D. Johnson, Region IV
M. C. Thadani, NRR
Resident Inspectors, CPSES

60-Day Response to NRC Bulletin 2004-01, "Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized Water Reactors"

On May 28, 2004, the NRC issued Bulletin 2004-01, "Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized Water Reactors." [1] The NRC requested the following:

NRC Request 1:

All subject pressurized water reactor (PWR) addressees are requested to provide the following information within 60 days of the date of this bulletin.

TXU Response 1:

TXU is providing this response within 60 days.

NRC Request 1(a):

- *Provide a description of the pressurizer penetrations and steam space piping connections at your plant. At a minimum, this description should include materials of construction (e.g., stainless steel piping and/or weld metal, Alloy 600 piping/sleeves, Alloy 82/182 weld metal or buttering, etc.), joint design (e.g., partial penetration welds, full penetration welds, bolted connections, etc.), and, in the case of welded joints, whether or not the weld was stress-relieved prior to being put into service. Additional information relevant with respect to determining the susceptibility of your plant's pressurizer penetrations and steam space piping connections to primary water stress corrosion cracking (PWSCC) should also be included.*

TXU Response1(a):

TXU has confirmed that there are no Alloy 600 base metal components in either the Unit 1 or the Unit 2 pressurizer or the associated steam space piping.

The CPSES Unit 1 & 2 pressurizer heater sleeves and instrumentation nozzles are stainless steel and were installed with stainless steel weld materials.

Table 1 below identifies the CPSES Unit 1 & 2 pressurizer penetration Alloy 82/182 weld locations and design details. No welds in the associated steam space piping employed alloy 82/182 weld materials.

1 Note that the pressurizer surge line welds are not in the scope of Bulletin 2004-01.

Table 1 – CPSES Unit 1 & 2 Pressurizer 82/182 Butt Welds

Component	Material	Joint Design
Safety 1/Line 6-RC-1-096 Weld TBX-1-4501-1 (Pressurizer Nozzle to Safe End)	Inconel Alloy 82/182	Full Penetration Butt Weld on Alloy 82/182 Buttering
Safety 2/Line 6-RC-1-098 Weld TBX-1-4501-12 (Pressurizer Nozzle to Safe End)	Inconel Alloy 82/182	Full Penetration Butt Weld on Alloy 82/182 Buttering
Safety 3/Line 6-RC-1-100 Weld TBX-1-4501-23 (Pressurizer Nozzle to Safe End)	Inconel Alloy 82/182	Full Penetration Butt Weld on Alloy 82/182 Buttering
PORV's/Line 6-RC-1-108 Weld TBX-1-4502-1 (Pressurizer Nozzle to Safe End)	Inconel Alloy 82/182	Full Penetration Butt Weld on Alloy 82/182 Buttering
Spray/Line 4-RC-1-091 Weld TBX-1-4503-31 (Pressurizer Nozzle to Safe End)	Inconel Alloy 82/182	Full Penetration Butt Weld on Alloy 82/182 Buttering
Safety 1/Line 6-RC-2-096 Weld TCX-1-4501-1 (Pressurizer Nozzle to Safe End)	Inconel Alloy 82/182	Full Penetration Butt Weld on Alloy 82/182 Buttering
Safety 2/Line 6-RC-2-098 Weld TCX-1-4502-1 (Pressurizer Nozzle to Safe End)	Inconel Alloy 82/182	Full Penetration Butt Weld on Alloy 82/182 Buttering
Safety 3/Line 6-RC-2-100 Weld TCX-1-4503-1 (Pressurizer Nozzle to Safe End)	Inconel Alloy 82/182	Full Penetration Butt Weld on Alloy 82/182 Buttering
PORV's/Line 6-RC-2-108 Weld TCX-1-4504-1 (Pressurizer Nozzle to Safe End)	Inconel Alloy 82/182	Full Penetration Butt Weld on Alloy 82/182 Buttering
Spray/Line 4-RC-2-091 Weld TCX-1-4506-22 (Pressurizer Nozzle to Safe End)	Inconel Alloy 82/182	Full Penetration Butt Weld on Alloy 82/182 Buttering

Table 2 and Table 3 below provide information regarding the pressurizer penetrations and steam space piping connections, including materials of construction, joint design, and whether or not the weld was stress-relieved prior to being put into service, for CPSES Units 1 and 2, respectively.

Table 2 – CPSES Unit 1 Pressurizer Penetration and Steam Space Piping Information

Component 1	Component 2	Component 3	Component 4	Component 5	Component 6	Component 7
Shell	Upper Head	Spray Nozzle Relief/Safety Nozzles	Spray/Relief/Safety Nozzle Safe Ends	Spray/Relief/Safety Nozzle to Spray/Relief/Safety Nozzle Safe End Welds	Instrument Nozzles - Tubing	Instrument Nozzles rolled tube to Pressurizer cladding weld
Alloy Steel SA-533 GR. A CL. 2 post weld heat treated	Alloy Steel SA-533 GR. A CL. 2 post weld heat treated	Alloy Steel SA-508 CL. 2 w/ Inconel Alloy 82/182 buttering for Safe End weld, post weld heat treated	Stainless Steel SA-182 GR. F316L	Full Penetration Butt Weld, Inconel Alloy 82/182	Stainless Steel SA-213 Type 316	Non-pressure boundary Seal Weld

Table 3 – CPSES Unit 2 Pressurizer Penetration and Steam Space Piping Information

Component 1	Component 2	Component 3	Component 4	Component 5	Component 6	Component 7
Shell	Upper Head	Spray Nozzle Relief/Safety Nozzles	Spray/Relief/Safety Nozzle Safe Ends	Spray/Relief/Safety Nozzle to Spray/Relief/Safety Nozzle Safe End Welds	Instrument Nozzles - Tubing	Instrument Nozzles rolled tube to Pressurizer cladding weld
Alloy Steel SA-533 GR. A CL. 2 post weld heat treated	Alloy Steel SA-533 GR. A CL. 2 post weld heat treated	Alloy Steel SA-508 CL. 2 w/ Inconel Alloy 82/182 buttering for Safe End weld, post weld heat treated	Stainless Steel SA-182 GR. F316L	Full Penetration Butt Weld, Inconel Alloy 82/182	Stainless Steel SA-213 Type 316	Non-pressure boundary Seal Weld

NRC Request 1(b):

- *Provide a description of the inspection program for Alloy 82/182/600 pressurizer penetrations and steam space piping connections that has been implemented at your plant. The description should include when the inspections were performed; the areas, penetrations and steam space piping connections inspected; the extent (percentage) of coverage achieved for each location which was inspected; the inspection methods used; the process used to resolve any inspection findings; the quality of the documentation of the inspections (e.g., written report, video record, photographs); and, the basis for concluding that your plant satisfies applicable regulatory requirements related to the integrity of pressurizer penetrations and steam space piping connections. If leaking pressurizer penetrations or steam space piping connections were found, indicate what follow up non destructive examinations (NDE) was performed to characterize flaws in the leaking penetrations.*

TXU Response1(b):

Inspections

The pressurizer is visually inspected during the Generic Letter 88-05 boric acid control program walkdowns each outage, implemented by TXU procedure STA-737, "Boric Acid Corrosion Detection and Evaluation." These walkdowns are performed in Mode 3 (hot standby) at the beginning of the refueling outage by System Engineering personnel. No pressurizer component insulation is routinely removed in support of these inspections.

The Class I welds on the three safety valve lines, the power operated relief valve (PORV) line, and the spray line have previously been scoped into the In-Service Inspection (ISI) Plan and have been ultrasonically (UT) inspected. The subject CPSES Unit 1 & 2 inspections are listed in Table 4 below. Even small boric acid deposits would have been identified during a UT exam of these welds.

Table 4 – Previous ISI NDE for Unit 1 & 2 Pressurizers

Weld	Inspection type	Date
Safety 1/Line 6-RC-1-096 Weld TBX-1-4501-1	UT	1RF05 – Fall 1996
Safety 2/Line 6-RC-1-098 Weld TBX-1-4501-12	UT	1RF05 – Fall 1996
Safety 3/Line 6-RC-1-100 Weld TBX-1-4501-23	UT	1RF05 – Fall 1996
PORV's/Line 6-RC-1-108 Weld TBX-1-4502-1	UT	1RF05 – Fall 1996
Spray/Line 4-RC-1-091 Weld TBX-1-4503-31	UT	1RF05 – Fall 1996
Safety 1/Line 6-RC-2-096 Weld TCX-1-4501-1	UT	2RF03-Fall 1997
Safety 2/Line 6-RC-2-098 Weld TCX-1-4502-1	UT	2RF02- Spring 1996

Weld	Inspection type	Date
Safety 3/Line 6-RC-2-100 Weld TCX-1-4503-1	UT	2RF02- Spring 1996
PORV's/Line 6-RC-2-108 Weld TCX-1-4504-1	UT	2RF02- Spring 1996
Spray/Line 4-RC-2-091 Weld TCX-1-4506-22	UT	2RF02- Spring 1996

The CPSES Unit 1 & 2 UT inspections of the pressurizer penetrations identified no evidence of incipient or actual through-wall pressure boundary leakage, nor was there any evidence of corrosion or wastage.

During the most recent outage in each CPSES unit, 1RF10 for Unit 1 and 2RF07 for Unit 2, bare metal visual inspections were performed on the pressurizer Alloy 82/182 nozzle-to-safe end welds listed in Table 1 above. The Unit 2 inspections were conducted first (Fall 2003) on a best-effort, informal basis by Engineering personnel. The corresponding Unit 1 locations were similarly inspected during 1RF10 (Spring 2004) under the guidance of a written engineering inspection plan. The inspection method for both units was direct visual and no conditions indicative of RCS leakage were observed at any of the subject locations. No limitations were encountered and the entire weld surface was inspected. Digital pictures of the general arrangement and typical condition of these locations were taken for future inspection planning purposes. These inspections were documented in the boric acid walkdown report for Unit 1 and the site Work Order process for both units.

Compliance with Regulatory Requirements

As described in the applicable regulatory requirements section of NRC Bulletin 2004-01, several provisions of the NRC regulations and plant operating licenses pertain to reactor coolant pressure boundary (RCPB) integrity and the issues addressed in the Bulletin. The Bulletin cites the following regulatory requirements as providing the basis for the bulletin assessment:

- Appendix A to 10 CFR Part 50, General Design Criteria (GDC) for Nuclear Power Plants
- GDC 14 – Reactor Coolant Pressure Boundary
- GDC 31 – Fracture Prevention of Reactor Coolant Pressure Boundary
- GDC 32 – Inspection of Reactor Coolant Pressure Boundary
- Plant Technical Specifications
- 10 CFR 50.55a, Codes and Standards, which incorporates by reference Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components, of the ASME Boiler and Pressure Vessel Code
- Appendix B of 10 CFR Part 50, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants, Criteria V, IX, and XVI

GDC:

The Bulletin states that the applicable GDC include GDC 14, GDC 31, and GDC 32. GDC 14 specifies that the RCPB be designed, fabricated, erected, and tested so as to have an extremely

low probability of abnormal leakage, of rapidly propagating failure, and of gross rupture. GDC 31 specifies that the RCPB be designed with sufficient margin to assure that the probability of rapidly propagating fracture is minimized. GDC 32 specifies that components that are part of the RCPB be designed to permit periodic inspection and testing of important areas and features to assess their structural and leak tight integrity.

As part of the original design and licensing of CPSES, TXU demonstrated that the design of the RCPB meets these requirements. CPSES complied with these criteria in part by: 1) selecting corrosion resistant austenitic and ferrous materials with extremely high fracture toughness for RCPB materials; and 2) following NRC approved codes and standards for fabrication, erection, and testing of the pressure boundary parts. TXU has implemented the required ASME Section XI examinations in accordance with the CPSES ISI Plan. As described above, the requirements established for design, fracture toughness, and inspectability in GDC 14, 31, and 32, respectively, were satisfied during the initial design and licensing, and continue to be satisfied during operation, even though instances of stress corrosion cracking have been identified in other pressurizers.

Plant Technical Specifications:

The limits for CPSES RCPB leakage are provided in Technical Specification (TS) 3.4.13 (i.e., 1 gallon per minute for unidentified leakage; 10 gpm for identified leakage; and no leakage from the RCPB). Routine surveillance testing is performed to ensure these requirements are met. Based on the few instances of flaws or leakage in industry experience, leaks from pressurizer Alloy 82/182 welds have been well below the sensitivity of on-line leakage detection systems. If measurable leakage is detected by the on-line leak detection systems, the leak will be evaluated per the TS, and the plant will be shut down if required. Upon detection and identification of a leak, corrective actions will be taken to restore RCPB integrity. TXU continues to meet the requirements of this TS.

Inspection Requirements (10 CFR 50.55a and ASME Section XI):

The Bulletin describes the requirements for inspection in accordance with the ASME Code, detection of leakage from insulated components, and the acceptance standards if through wall leakage is detected. TXU has complied with the inspection requirements for the Unit 1 & 2 Alloy 82/182 welds as part of the CPSES In-Service Inspection Plan. In addition, the insulated pressurizer and piping areas are also inspected through the STA-737 boric acid walkdowns each outage.

Quality Assurance Requirements (10 CFR.50, Appendix B):

The Bulletin states that special processes, including nondestructive testing, shall be controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criterion, and other special requirements, as required by 10 CFR 50 Appendix B, Criterion V (Instructions, Procedures, and Drawings) and, Criterion IX (Control of Special Processes). CPSES programs comply with these requirements.

As described above, CPSES has performed inspections of these welds as required by the CPSES ISI Plan. These inspections have been performed and documented in accordance with ASME

Section XI, 1986 Edition no addenda. Future inspections will be performed in accordance with Section XI, 1998 Edition, 1999 and 2000 addenda.

CPSES is in compliance with criterion XVI of 10 CFR 50 Appendix B which states that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. For significant conditions adverse to quality, the measures taken shall include root cause determination and corrective action to preclude repetition of the adverse conditions.

NRC Request 1(c):

Provide a description of the Alloy 82/182/600 pressurizer penetration and steam space piping connection inspection program that will be implemented at your plant during the next and subsequent refueling outages. The description should include the areas, penetrations and steam space piping connections to be inspected; the extent (percentage) of coverage to be achieved for each location; inspection methods to be used; qualification standards for the inspection methods and personnel; the process used to resolve any inspection indications; the inspection documentation to be generated; and the basis for concluding that your plant will satisfy applicable regulatory requirements related to the structural and leakage integrity of pressurizer penetrations and steam space piping connections. If leaking pressurizer penetrations or steam space piping connections are found, indicate what followup NDE will be performed to characterize flaws in the leaking penetrations. Provide your plans for expansion of the scope of NDE to be performed if circumferential flaws are found in any portion of the leaking pressurizer penetrations or steam space piping connections.

TXU Response1(c):

TXU will perform a bare metal visual (BMV) inspection of each identified Alloy 82/182 weld location in the CPSES Unit 1 & 2 pressurizers every refueling outage, including 100% of the circumference over the axial length of the welds, until effective PWSCC-mitigative actions are taken or a technically robust, industry recommended inspection regime is issued. The list of those locations is provided in Table 1. TXU will remove sufficient insulation to allow a BMV inspection of each of the subject welds containing Alloy 82/182 weld material.

Personnel performing the examinations will be qualified per the requirements for personnel implementing the CPSES Boric Acid Corrosion Detection and Evaluation Program per station procedure STA-737. Should additional NDE techniques be utilized for follow up examinations, personnel involved will be qualified in accordance with ASME Section XI, 1989 Edition or later approved Code editions, if there are qualification requirements applicable to the examination technique(s) employed.

Any accumulations of boric acid residue on or around the weld areas will be investigated to determine the origin of the deposit. If through-wall leakage is suspected or if through-wall leakage would be masked by leakage from other components, additional NDE techniques such as UT, eddy current or radiographic techniques will be used to inspect for and characterize any indications. ASME Code requirements for evaluation and repair of any flaws detected will be followed. These additional followup inspections will be documented on examination data sheets.

Based on the information contained in the responses to the preceding questions as summarized below, TXU has concluded it has reasonable assurance that the CPSES Unit 1 & 2 pressurizers and connected piping are capable of fulfilling all applicable licensing and design basis requirements.

- Specific licensing basis requirements are addressed in the response to NRC Request 1(b). TXU will continue to meet these requirements.

- If any cracking, leakage or degradation is detected during the pressurizer inspections, corrective actions will be taken in accordance with the CPSES corrective action program and plant procedures. Any RCPB leakage or degradation would be considered a significant condition adverse to quality and appropriate actions, including performing a cause analysis, will be taken.

- In consideration of potential conditions adverse to quality, TXU has been actively participating in industry organizations (Westinghouse Owners Group and Material Reliability Program) and continues to be aware of industry experience.

- If through wall leakage is suspected, additional NDE techniques such as ultrasonic, eddy current or radiographic techniques will be used to characterize any indications. ASME Code requirements for evaluation and repair of any flaws detected will be followed.

- If circumferential flaws are found in any portion of the Alloy 82/182 pressurizer welds, additional NDE techniques such as ultrasonic, eddy current or radiographic techniques will be used on all of the welds listed in Table 1 for that unit to determine the extent of condition and to identify any other evaluation or repairs required by the ASME Code.

NRC Request 1(d):

In light of the information discussed in this bulletin and your understanding of the relevance of recent industry operating experience to your facility, explain why the inspection program identified in your response to item (1)(c) above is adequate for the purpose of maintaining the integrity of your facility's RCPB and for meeting all applicable regulatory requirements which pertain to your facility.

TXU Response1(d):

To date, flaws in Alloy 82/182 welds have been detected through visual examination or routine inspections required by the ASME Section XI Code. As discussed in NRC Information Notice (IN) 2004-11, flaws in pressurizer welds were determined to be axial. These flaws would not be expected to propagate into the carbon steel vessel or stainless steel piping components. The flaws reported in IN 2004-11 and industry experience such as the V.C. Summer hot leg weld crack have not been near critical flaw size, and have retained significant strength and weld integrity.

The CPSES Unit 1 and Unit 2 pressurizers do not contain Alloy 600 heater sleeves and welds, and leakage has not been reported through stainless steel heater sleeves.

As stated above, TXU will perform a bare metal visual (BMV) inspection of each identified weld location in the CPSES Unit 1 & 2 pressurizers with Alloy 82/182 every refueling outage, including 100% of the circumference over the axial length of the welds. The list of those locations is provided in Table 1. TXU will remove sufficient insulation to allow a BMV inspection of each of the welds containing Alloy 82/182 weld material. These inspections provide adequate assurance that any leakage will be detected at an early stage and can be corrected to ensure continued compliance with GDC 14 and 31 and retain an extremely low probability of abnormal leakage, of rapidly propagating failure, and of gross rupture.

NRC Request 2:

Within 60 days of plant restart following the next inspection of the Alloy 82/182/600 pressurizer penetrations and steam space piping connections, the subject PWR licensees should either:

(a) Submit to the NRC a statement indicating that the inspections described in the licensee'sresponse to item (1)(c) of this bulletin were completed and a description of the as-found condition of the pressurizer shell, any findings of relevant indications of through-wall leakage, followup NDE performed to characterize flaws in leaking penetrations or steam space piping connections, a summary of all relevant indications found by NDE, a summary of the disposition of any findings of boric acid, and any corrective actions taken and/or repairs made as a result of the indications found,

or

(b) if the licensee was unable to complete the inspections described in response to item (1)(c) of this bulletin, submit to the NRC a summary of the inspections performed, the extent of the inspections, the methods used, a description of the as-found condition of the pressurizer shell, any findings of relevant indications of through-wall leakage, followup NDE performed to characterize flaws in leaking penetrations or steam space piping connections, a summary of all relevant indications found by NDE, a summary of the disposition of any findings of boric acid, and any corrective actions taken and/or repairs made as a result of the indications found. In addition, supplement the answer which you provided to item (1)(d) above to explain why the inspections that you completed were adequate for the purpose of maintaining the integrity of your facility's RCPB and for meeting all applicable regulatory requirements which pertain to your facility.

TXU Response 2:

TXU will provide the requested information within 60 days after plant restart following the next inspection of the Alloy 82/182 pressurizer penetrations and steam space piping connections for CPSES Units 1 and 2

Other Dissimilar Metal Welds Examined

During the most recent outage in each CPSES unit, 1RF10 for Unit 1 and 2RF07 for Unit 2, bare metal visual inspections were also performed on most of the remaining RCS Alloy 82/182 weld

locations. These inspections were conducted in conjunction with the pressurizer BMV exams described above in response to question 1(b). The locations included the pressurizer surge line nozzle-to-safe end welds, the reactor vessel nozzle-to-safe end welds, and the steam generator channel head drains (plugged). The Unit 2 inspections were conducted first (Fall 2003) on a best-effort, informal basis by Engineering personnel. This inspection included two steam generator channel head drains and the nozzle-to-safe end welds for two RV hot legs, one cold leg, and the pressurizer surge line. For Unit 1 all four steam generator channel head drains and all nozzle-to-safe end welds for the reactor vessel and the pressurizer surge line were similarly inspected during 1RF10 (Spring 2004) under the guidance of a written engineering inspection plan. The inspection method for both units was direct visual and no conditions indicative of RCS leakage were observed at any of the subject locations. No limitations were encountered and the entire weld surface was inspected. Digital pictures of the general arrangement and typical condition of these locations were taken for future inspection planning purposes. These inspections were documented in the boric acid walkdown report for Unit 1 and the site Work Order process for both units.