WOLF CREEK
NUCLEAR OPERATING CORPORATION

Terry J. Garrett
Vice President, Engineering

May 2, 2007

ET 07-0011

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

Reference:
1) Letter ET 06-0038, dated September 27, 2006, from T.J. Garrett, WCNOC, to USNRC
2) Letter dated April 3, 2007, from V. Rodriguez, USNRC, to T.J. Garrett, WCNOC (ML070710027)
3) Letter dated April 3, 2007, from V. Rodriguez, USNRC, to T.J. Garrett, WCNOC (ML070930559)
4) Letter dated April 4, 2007, from V. Rodriguez, USNRC, to T.J. Garrett, WCNOC (ML070710050)
5) Letter dated April 18, 2007, from V. Rodriguez, USNRC, to T.J. Garrett, WCNOC (ML071000259)

Subject: Docket No. 50-482: Response to NRC Requests for Additional Information Related to Wolf Creek Generating Station License Renewal Application

Gentlemen:

Reference 1 provided Wolf Creek Nuclear Operating Corporation's (WCNOC) License Renewal Application for the Wolf Creek Generating Station (WCGS). References 2 through 5 requested additional information regarding the License Renewal Application. Attachments I, II, III, and IV provide the WCNOC response to each NRC request.

Attachment V provides a summary of the commitments made in this response.

If you have any questions concerning this matter, please contact me at (620) 364-4084, or Mr. Kevin Moles at (620) 364-4126.

Sincerely,

Terry J. Garrett

TJG/rlt

A121

Oath

Attachments I – WCNOC Response to NRC Requests for Additional Information (ML070710027) Dated April 3, 2007
II – WCNOC Response to NRC Requests for Additional Information (ML070930559) Dated April 3, 2007
III - WCNOC Response to NRC Requests for Additional Information (ML070710050) Dated April 4, 2007
IV - WCNOC Response to NRC Requests for Additional Information (ML071000259) Dated April 18, 2007
V - List of Regulatory Commitments

Enclosure 1 - Drawing Revisions

cc: J. N. Donohew (NRC), w/a, w/e
V. G. Gaddy (NRC), w/a, w/e
B. S. Mallett (NRC), w/a, w/e
V. Rodriguez (NRC), w/a, w/e
Senior Resident Inspector (NRC), w/a, w/e

STATE OF KANSAS)
) SS
COUNTY OF COFFEY)

Terry J. Garrett, of lawful age, being first duly sworn upon oath says that he is Vice President Engineering of Wolf Creek Nuclear Operating Corporation; that he has read the foregoing document and knows the contents thereof; that he has executed the same for and on behalf of said Corporation with full power and authority to do so; and that the facts therein stated are true and correct to the best of his knowledge, information and belief.

By _____
Terry J. Garrett
Vice President Engineering

SUBSCRIBED and sworn to before me this 2 day of May, 2007.

NOTARY PUBLIC
OFFICIAL SEAL
STATE OF
RHONDA L. TIEMEYER
MY COMMISSION EXPIRES
January 11, 2010

Rhonda L. Tiemeyer
Notary Public

Expiration Date January 11, 2010

Attachment I

WCNOC Response to NRC Requests for Additional Information (ML070710027)
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RAI 2.3.3.1-1
RAI 2.3.3.5-1
RAI 2.3.3.5-2
RAI 2.3.3.6-1
RAI 2.3.3.6-2
RAI 2.3.3.15-1
RAI 2.3.4.2-1
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RAI 2.3.3.2-2
RAI 2.3.3.2-3
RAI 2.3.3.16-1
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RAI 2.3.3.16-3
RAI 2.3.3.16-4
RAI 2.3.3.16-5
RAI 2.3.3.16-6
RAI 2.3.3.18-1
RAI 2.3.3.21-1
RAI 2.3.4.4-1
RAI 2.3.4.4-2
RAI 2.3.4.4-3

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Fuel Handling - Fuel Storage and Handling System

RAI 2.3.3.1-1

License renewal drawing LRA-WCGS-EC-M-12EC01 shows the layout of the spent fuel pool, cask loading pit, and the fuel transfer canal. These three areas are adjacent and separated by walls, except in two slots. Spent fuel gates seal off the slots.

Updated Safety Analysis Report (USAR) Section 9.1.2.2, describes the leaktight gates in the spent fuel pool and their functions. The USAR states that the purpose of the leaktight gate is to allow drainage of the cask loading pit and fuel transfer canal while maintaining the proper water inventory in the spent fuel pool. The USAR further states that an acceptable minimum water level will be maintained in the event of loss of integrity of the gate while either the cask-loading pit or fuel transfer canal is drained.

LRA Section 2.3.3.1 does not include the spent fuel gates within the scope of license renewal. The spent fuel gates do not appear elsewhere in the LRA. The spent fuel gates appear to be required as a pressure boundary to maintain correct water level above the spent fuel when the cask loading pit and the fuel transfer canal are drained. The staff requests that the applicant justify the exclusion of the spent fuel gates and their sealing mechanisms from the scope of license renewal.

RAI 2.3.3.1-1 Response

Engineering has verified that simultaneous loss of both spent fuel gates, while both adjacent fuel-handling areas are drained, would not result in draining the pool down to an unacceptable limit. This conforms with the regulatory position of Regulatory Guide 1.13, Rev. 1, Section C.6, that systems for maintaining water quantity should be designed so that any maloperation or failure of such systems will not cause fuel to be uncovered. Paragraph 6 of USAR Table 9.1-3 confirms that the WCGS design complies with this guidance. Therefore, the spent fuel gates are not required as a pressure boundary to maintain correct water level above the spent fuel when the cask loading pit and the fuel transfer canal are drained, and aging management of the gates and seals is not required.

Containment Cooling System

RAI 2.3.3.5-1

License renewal drawing LRA-WCGS-GN-M-12GN01 shows containment coolers SGN01A, SGN01B, SGN01C, and SGN01D within the scope of license renewal because they are safety-related. LRA Section 2.3.3.5 states that the containment cooling system, in conjunction with the containment spray system, removes sufficient energy and subsequent decay heat from the containment atmosphere following a design basis loss of coolant accident or a main steam line break inside the containment to maintain it below the design pressure.

Each of the containment coolers has three drain lines attached to the cooler shell (air side) of the heat exchanger upstream of their respective fan unit. The drain lines are 4-inch each and join to form an 8-inch diameter line on each containment cooler. Each of the drain lines pass

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through a drain trap as shown on license renewal drawing LRA-WCGS-LF-M-12LF09. USAR Section 6.2.2.2.2.3, describes that condensate is collected and measured to identify leakage.

The drain lines are not shown to be within the scope of license renewal, although they appear to support the system intended function of the containment coolers. If the lines were to fail, then excessive flow through the containment cooler casing (through the failed drain lines) could bypass the cooling coils and defeat their intended function.

The staff requests that the applicant justify the exclusion of the drain lines from the scope of license renewal up to the drain traps.

RAI 2.3.3.5-1 Response

The Containment Cooling system is designed with redundancy and no single failure will compromise the system's safety functions (USAR 6.2.2.2.3). Containment Cooler housing failure resulting in coil bypass air-flow has been postulated. USAR Table 6.2.2-8 describes this single failure and indicates that the three remaining functional coolers are adequate for the system to perform its safety functions.

The three drain lines associated with each containment cooler are non-safety related and non-seismic. They cannot be credited to remain functional after a design basis accident. The containment environment during a LOCA is a saturated mixture of air and water vapor. The drain lines are sized to prevent flooding of cooling coils from condensation of the air-water vapor mixture. The volume of water condensed by the coiling coils during a LOCA or main steam line break in containment is significant.

The containment cooling units are very large. The containment cooler discharge ducting is nearly 9 feet in diameter and the containment coolers have an approximate 17' x 11' footprint, are over 10 feet high, and have cooling coil faces on three sides. Thus, the three 4" drain lines are small with respect to the cooling unit. The differential pressure across the coiling coils is low; approximately 1" w.g., therefore, significant bypass flow from an open drain line is not credible.

RAI 2.3.3.5-2

LRA Section 2.3.3.5 states that portions of the system support environmental qualification in accordance with 10 CFR 54.4(a)(3). Drawing LRA-WCGS-GN-M-12GN01 shows containment coolers SGN01A, SGN01B, SGN01C, and SGN01D within the scope of license renewal. However, the drawing shows the discharge ductwork from the containment coolers excluded from the scope of license renewal. During normal operation, the containment cooler discharge ductwork supplies cooled air to areas that contain safety-related equipment, such as instrumentation adjacent to the steam generator compartments.

USAR Section 3.11(B) describes the environmental conditions and design bases for which safety systems are designed to ensure acceptable performance during normal operation and during design basis accidents environmental conditions.

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USAR Section 3.11(B).2.1 describes that safety equipment (in accordance with USAR Table 3.11(B)-3) is designed for 40 years of operation in its environment during normal operation as well as in its environment following a design basis accident.

USAR Table 3.11(B)-1 describes the maximum expected temperatures in the reactor building to be 220°F at the reactor cavity. USAR Table 3.11(B)-3 identifies the equipment and instrumentation required to achieve and maintain shutdown conditions, such as pressurizer pressure and steam generator level transmitters.

The staff requests that the applicant justify the exclusion of the containment cooler discharge ductwork from the scope of license renewal and explain how cooling does not contribute towards the equipment's qualified life.

RAI 2.3.3.5-2 Response

The containment cooler discharge ductwork is not credited in the USAR with a safety-related function. The discharge ductwork is designed to remain functional during normal operation only. During accident conditions, the discharge ductwork is designed to automatically detach from the containment cooling fan through actuation of fusible link at approximately 160°F (USAR 6.2.2.2.2.2).

The containment cooler discharge ductwork is 104" diameter class 5NL ductwork. The "5NL" Bechtel ductwork class designation indicates that this is galvanized steel, gas-tight welded construction ducting. It is non-safety related and non-seismically qualified. USAR Section 6.2.2.2.1.2 – Power Generation Design Basis, states, "The containment cooling system, operating in conjunction with the containment heating, ventilating, and air-conditioning system described in Section 9.4.6, is designed to limit the ambient containment air temperature during normal plant operation to 120°F." Containment temperatures are monitored and actuate alarms in the Control Room. Thus, any failure of the discharge duct that resulted in elevated containment temperatures would be mitigated by operator action. Technical Specification 3.6.5 requires containment air temperature to be less than 120°F.

Thus, the containment cooler discharge ductwork is not in the scope of license renewal. Aging management of this ductwork is not required since the ductwork is only required during normal operation, normal containment temperatures are monitored and actions set forth in the technical specifications prevent prolonged operation with containment temperatures above 120°F.

Compressed Air System

RAI 2.3.3.6-1

License renewal drawing LR-WCGS-KA-M-12KA05, at location B-6, shows relief valve V0706 not color coded, which indicates it is not within the scope of license renewal and subject to aging management review. The valve is within the safety-related boundary flag and protects the safety-related accumulator, TKA05 from over pressurization. Therefore, relief valve V0706

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should be within the scope of license renewal pursuant to 10 CFR 54.4(a)(1). The staff requests that the applicant explain why valve V0706 is not color coded in green on this drawing.

RAI 2.3.3.6-1 Response

Valve V0706 should be highlighted green on License Renewal Boundary Drawing LR-WCGS-KA-M-12KA05. V0706 was evaluated as within the scope of license renewal and subject to aging management review.

RAI 2.3.3.6-2

License renewal drawing LRA-WCGS-KA-M-12KA05, at locations G-7 and E-7, shows the test connections attached to valves V0676 and V0677 color coded red in accordance with 10 CFR 54.4(a)(2) criteria. On the same drawing, the test connections for valves V0683, V0684, V0685 and V0686, at locations H-6, F-6, D-6 and B-6, respectively, are not color coded which indicate that they are not within the scope of license renewal and subject to an aging management review (AMR). The staff requests that the applicant describe what is the license renewal intended function of the test connections for valves V0676 and V0677 and why it does not apply to the test connections for valves V0683, V0684, V0685 and V0686.

RAI 2.3.3.6-2 Response

The test connections for valves V0683, V0684, V0685 and V0686 should be highlighted red on License Renewal Boundary Drawing LR-WCGS-KA-M-12KA05. The test connections were evaluated as within the scope of license renewal and subject to aging management review.

Emergency Diesel Engine Fuel Oil Storage and Transfer System

RAI 2.3.3.15-1

License renewal drawing LR-WCGS-JE-M-12JE01, at locations G-7 and C-7, show flame arresters FA-0001A and FA-0001B on the emergency fuel oil storage tanks. The drawing also shows flame arresters FA-0002A and FA-0002B, at locations H-4 and D-4, on the emergency fuel oil day tanks, which are not highlighted as within the scope of license renewal. These flame arresters may be needed for fire protection purposes. The staff requests that the applicant clarify whether these flame arresters should be within the scope of license renewal in accordance with 10 CFR 54.4(a). If not, please justify their exclusion.

RAI 2.3.3.15-1 Response

Flame arrestors FA-0001A, FA-0001B, FA-0002A and FA-0002B on license renewal drawing LR-WCGS-JE-M-12JE01, at locations G-7, C-7, H-4 and D-4, will be added to the scope of license renewal. Component type "flame arrestor" will be added to LRA Table 2.3.3-15 and LRA Table 3.3.2-15.

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Main Steam System

RAI 2.3.4.2-1

License renewal drawing LR-WCGS-AB-M-12AB01, at locations D-3, D-6, H-3 and H-6, shows four atmospheric relief valve silencers that are not color coded as within the scope of license renewal and subject to an AMR. These four silencers are attached to piping which are within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). If the pipings intended function is to provide a pressure boundary for the steam flow path, then the staff requests that the applicant explain why the silencers are not within the scope of license renewal in accordance with 10 CFR 54.4(a)(2) for functional support. The staff also requests that the applicant describe the physical configuration of the silencers such that if they fail they will not prevent the atmospheric relief valves from performing their intended function.

RAI 2.3.4.2-1 Response

The non-safety related atmospheric relief valve exhaust pipes are in scope for the criteria of 10CFR54.4(a)(2) based on the possibility of spatial interaction with safety related components in the area. The exhaust pipes are of Seismic Category II/I. The silencers connected to the end of the exhaust pipes are located on the roof area and do not have spatial interaction effects on any safety related components. The silencers do not provide any support for the structural integrity of any safety related component. Based on the details of the location and structural supports of the exhaust silencers on the roof area, the failure of the silencers will not prevent the atmospheric relief valves from performing their intended function.

RAI 2.3.4.2-2

License renewal drawing LRA-WCGS-AB-M-12AB03, at locations F-8, E-8, C-8, and B-8, shows steam traps ST0001, ST0002, ST0003 and ST0004 that are not color coded as within the scope of license renewal and subject to an AMR. The steam traps are attached to 2-inch lines. The staff requests that the applicant explain why these four traps are not within the scope of license renewal in accordance with 10 CFR 54.4(a)(3) and how the lines are isolated.

RAI 2.3.4.2-2 Response

The steam traps are attached to 1 inch lines. Based on details provided by plant isometric drawings, there are 2"x1" reducers installed upstream of the steam traps.

The one event, which causes the main steam lines in the turbine building to be scoped into Post Fire Safe Shut Down (PFSSD), is a fire in the main steam tunnel that causes two main steam lines to fail to isolate. Valves in the turbine building would be closed to isolate the main steam and prevent a rapid depressurization of the secondary side, resulting cooldown of the primary side, and potential return to criticality. The failure of a one-inch line, and even several one-inch lines, was considered and determined to be insignificant. Throttling one or both Atmospheric Relief Valves (ARV's) closed to control depressurization could easily compensate for the loss of steam due to this event.

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The one-inch lines associated with the subject steam traps are not included in the scope of components required for PFSSD, thus are not included in scope for criteria of 10CFR54.4(a)(3).

The steam traps only allow the condensation to pass to the drain lines during normal operation or post-fire shutdown, and steam flow through the traps is isolated as designed.

RAI 2.3.4.2-3

License renewal drawing LRA-WCGS-AB-M-12AB03, at location H-5, has a note stating "to be evaluated in LRID AE, Feedwater System" which points to reference continuation flags to drawings M-12FC03 and M-12FC04. For license renewal, drawings M-12FC03 and M-12FC04 are designated as LR-WCGS-AB-M-12FC03 and LR-WCGS-AB-M-12FC04, respectively.

The staff requests that the applicant explain why the note references LRID AE, when these two drawings have been associated and evaluated within the main steam system for license renewal.

RAI 2.3.4.2-3 Response

The note is incorrect. When the scoping package for the main steam system for license renewal (LRID AB) was revised to include plant system FC, the note on license renewal drawing LR-WCGS-AB-M-12AB03 was not removed.

RAI 2.3.4.2-4

License renewal drawing LRA-WCGS-AB-M-12FB01, at location G-8, has a note stating, "This section is evaluated in LRID AL" which points to a reference continuation flag to drawing M-12FC02. For license renewal, drawing M-12FC02 is designated as LR-WCGS-AB-M-12FC02. The staff requests that the applicant explain why the note references LRID AL, auxiliary feedwater system, when the referenced drawing has been associated and evaluated within the main steam system for license renewal.

RAI 2.3.4.2-4 Response

The note is incorrect. When the scoping package for the main steam system for license renewal (LRID AB) was revised to include plant system FC, the note on license renewal drawing LR-WCGS-AB-M-12FB01 was not removed.

RAI 2.3.4.2-5

License renewal drawings for the main steam system have lines highlighted in green indicating that they are within the scope of license renewal and are required to support the system intended functions. However, multiple lines that are sized 1-inch and under, that branch off the highlighted lines with no valve or other interfacing components are not highlighted.

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The size 1-inch and under lines in the main steam system are included on license renewal drawings LRA-WCGS-AB-M-12AB03. Examples of these lines include those at locations G-8 (line 237-DBD-1), H-6 (off line 148-DBD-6), G-5 (off line 167-DBD-6), G-4 (line 317-DBD-1), H-3 (line DBD-1/2), E-8 (line 206-DBD-1), and D-7 (off line 241-DBD-36), among others.

The staff requests that the applicant justify the exclusion of the size 1-inch and under lines from the scope of license renewal. In addition, the staff requests that the applicant explain whether the impact of multiple line failures were considered on system intended functions.

RAI 2.3.4.2-5 Response

The one-inch lines (vents and drains) shown on LR-WCGS-AB-M-12AB03 are not included in the scope of components required for Post Fire Safe Shut Down (PFSSD). PFSSD would be the only reason these components would be included in scope for license renewal. Since they are not scoped for PFSSD, they are not in scope for license renewal.

The one event which causes the main steam lines in the turbine building to be scoped into PFSSD is a fire in the main steam tunnel that causes two main steam lines to fail to isolate. Valves in the turbine building would be closed to isolate the main steam and prevent a rapid depressurization of the secondary side, resulting cooldown of the primary side, and potential return to criticality. The failure of a one-inch line, and even several one-inch lines, was considered and determined to be insignificant. Throttling one or both Atmospheric Relief Valves (ARVs) closed to control depressurization could easily compensate for the loss of steam due to this event.

The ARVs at Wolf Creek are 8-inch Masoneilan air operated valves capable of throttling. They have a seat diameter of 5.061 inches. The port diameter is slightly smaller, but still greater than 5 inches. Each ARV, therefore, has at least 19.6 square inches of flow area. Analysis has shown that it takes a minimum of two functional ARVs to meet the Appendix R criteria of being in cold shutdown in 72 hours.

A one-inch pipe has a flow area of less than 0.79 square inches. Multiple pipe failures were considered, but all of the one-inch pipes failing simultaneously were considered incredible. There are 31 one-inch vents and drains and 7 one-half-inch pipes in the main steam system excluded from the scope of PFSSD. There are also several instrument tubes of unknown sizes, but assumed to be 1/4 inch tubes. If all 38 pipes ruptured cleanly at the same time, the resulting flow area would be less than 26 square inches, or about equal to 2/3 the flow area of two ARVs. Throttling closed on the two functional ARVs will assure a controlled cool-down rate. The simultaneous rupture of all the instrument tubing would add insignificant flow to the event.

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Liquid Radwaste System

RAI 2.3.2.5-1

License renewal drawing LR-WCGS-HB-M-12HB03, at locations A-5 and B-5, show piping from the discharge of the reactor makeup water transfer pump that is highlighted as non-safety related affecting safety-related based due to structural integrity of the piping lines. It is unclear where the boundary ends in the piping run going to the demineralized water degasifier. The staff requests that the applicant identify where the piping physically transitions from piping that is within the scope of license renewal and subject to aging management to piping outside the scope of license renewal.

RAI 2.3.2.5-1 Response

License renewal boundary drawing LR-WCGS-HB-M-12HB03 indicates that the piping and associated valves at coordinates A-5 and B-5 are within the scope of license renewal based upon the 10 CFR 54.4(a)(2) criteria, however this piping is in scope for spatial interaction and not for structural integrity considerations. Liquid radwaste system piping line 211-HCD-3 leaves the auxiliary building BLA (building, level, area) 134 and enters the turbine building BLA 431. Since the turbine building has no safety related components, the spatial interaction ends where the piping leaves the auxiliary building. The piping stub where valve V0355 is attached is located is in the turbine building.

Fuel Pool Cooling and Cleanup System

RAI 2.3.3.2-1

License renewal drawing LR-WCGS-EC-M-12EC01, at location C-3, shows a normally closed valve (V0995) at the spent fuel pool end of the fuel transfer tube.

The fuel transfer tube is noted as being safety-related and within the scope of license renewal for providing a pressure boundary. However, the valve is not listed as being within the scope of license renewal. The staff requests that the applicant justify the exclusion of this valve from the scope of license renewal as it provides structural support for the fuel transfer tube and meets the criterion of 10 CFR 54.4(a)(2).

RAI 2.3.3.2-1 Response

Non-safety valve V0995, which is attached to the fuel transfer tube in the fuel building, does not provide structural integrity to the fuel transfer tube. A floating saddle provides support for the fuel transfer tube and for valve V0995, which is attached to the end of the fuel transfer tube. Valve V0995 does not provide structural integrity to attached safety related equipment.

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RAI 2.3.3.2-2

License renewal drawing LR-WCGS-EC-M-12EC01, at locations E-7 and H-7, show removable spools with spacer rings installed (SS-001SR and SS-002SR). They are replacements for startup strainers. The piping lines are highlighted as being within the scope of license renewal. However, spacer rings are not listed in LRA Table 2.3.3-2 as being within the scope of license renewal. The staff requests the applicant to justify the exclusion of these components from LRA Table 2.3.3-2.

RAI 2.3.3.2-2 Response

Spacer rings ECSS001SR and ECSS002SR were incorrectly excluded from the scope of license renewal. Spacer rings ECSS001SR and ECSS002SR will be included in the scope of license renewal and will be given an intended function of "pressure boundary", which is the intended function of surrounding piping. LRA Tables 2.3.3-2 and 3.3.2-2 will be updated to include the component type "spacer ring" with an intended function of "pressure boundary."

RAI 2.3.3.2-3

License renewal drawing LR-WCGS-EC-M-12EC01, at location C-7, shows strainers in the suction piping from the spent fuel pool to the spent fuel pool cooling pumps. The strainers are installed on lines 009-HCC-12 and 001-HCC-12. These lines are highlighted as within the scope of license renewal and perform an intended function in accordance with 10 CFR 54.4(a)(1); however, the strainers are not highlighted. Failure of the strainers could cause damage to the pumps or valves and could prevent performance of the fuel pool cooling and cleanup system intended function. Section 54.4 of 10 CFR requires that structures, systems, and components (SSCs) whose failure could prevent the satisfactory accomplishment of a safety-related SSC intended function, be included within the scope of license renewal. The staff requests that the applicant justify the exclusion of the strainers from the scope of license renewal.

RAI 2.3.3.2-3 Response

Strainers ECIS0001 and ECIS0002 must maintain their structure to prevent the potential damage of safety related equipment. Strainers ECIS0001 and ECIS0002 will be included within the scope of license renewal. LRA Tables 2.3.3-2 and 3.3.2-2 will be updated to include the component type "strainer" with an intended function of "non-safety related structural support."

Emergency Diesel Engine System

RAI 2.3.3.16-1

License renewal drawings LRA-WCGS-KJ-M-12KJ01 and LRA-WCGS-KJ-M-12KJ04, at locations H-5 and H-6, show standby diesel generator jacket water expansion tanks, TKJ01A and TKJ01B, respectively. The tanks are within the safety-related boundary and are highlighted in green for meeting the requirements of 10 CFR 54.4(a)(1). Each tank has several lines

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extending from it that also appear to be safety-related; however, these lines are not highlighted. The lines in question are portions of 010-HBD-1, 066-HBD-1, 073-HBD-1, 011-HBD-1, 166-HBD-1, 173-HBD-1, and the chemical addition fittings.

LRA Section 2.1 states that every component meeting the scoping criterion of 10 CFR 54.4(a)(1), was included within the scope of the license renewal rule. The staff requests that the applicant justify the exclusion of these lines from the scope of license renewal.

RAI 2.3.3.16-1 Response

Drawings LR-WCGS-KJ-M-12KJ01 and LR-WCGS-KJ-M-12KJ04 show piping lines 010-HBD-1, 066-HBD-1, 073- HBD-1, 110-HBD-1, 166-HBD-1, 173-HBD-1 and the chemical addition fittings inside of safety-related boundary flags. However, isometric drawings for the piping lines show that the safety-related boundary is at the tank itself, and that the piping lines are not included in this boundary. These lines are non-safety-related Class HBD. Piping lines 066-HBD-1 and 166-HBD-1 provide tank makeup water. Piping lines 073-HBD-1 and 173-HBD-1 are tank overflow lines. Piping lines 010-HBD-1 and 110-HBD-1 are vent lines. These piping connections are above the tank's normal water level and the tank is vented to atmosphere. Failure of the piping would not create a leakage path that would drain the tanks.

Piping 010-HBD-1, 066-HBD-1, 073- HBD-1, 110-HBD-1, 166-HBD-1, 173-HBD-1 and the chemical addition fittings are not in the scope of license renewal.

RAI 2.3.3.16-2

License renewal drawings LRA-WCGS-KJ-M-12KJ01 and LRA-WCGS-KJ-M-12KJ04, at multiple locations; show at least ten flexible connections in the standby diesel generator cooling water system. The flexible connections are within the safety-related boundary and are highlighted in green for meeting the requirements of 10 CFR 54.4(a)(1). The flexible connections are exposed to jacket cooling water and provide a pressure boundary intended function.

LRA Tables 2.3.3-16 and 3.3.2-16 do not identify flexible connections as a component type exposed to a water environment. The staff requests that the applicant justify the exclusion of the flexible connections from the scope of license renewal in the jacket cooling water portion of the emergency diesel engine system.

RAI 2.3.3.16-2 Response

Flexible Connections associated with the Standby Diesel Engine System (KJ) cooling water system will be added to LRA Table 2.3.3-16 and LRA Table 3.3.2-16.

RAI 2.3.3.16-3

License renewal drawings LRA-WCGS-KJ-M-12KJ01 and LRA-WCGS-KJ-M-12KJ04, at multiple locations; show at least three flow orifices in the standby diesel generator cooling water

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system. The flow orifices are within the safety-related boundary and are highlighted in green for meeting the requirements of 10 CFR 54.4(a)(1). The flow orifices are exposed to jacket cooling water and provide a pressure boundary and flow restriction (throttling) intended functions.

LRA Tables 2.3.3-16 and 3.3.2-16 do not identify flow orifices as a component type exposed to a water environment. The staff requests that the applicant justify the exclusion of the flow orifices from the scope of license renewal in the jacket cooling water portion of the emergency diesel engine system.

RAI 2.3.3.16-3 Response

Orifices FO0001A, FO0101A, FO0003A, FO0003B, FO0004A, FO0004B, FO0005A, and FO0005B associated with the Standby Diesel Engine System (KJ) meeting the requirements of 10 CFR 54.4(a)(1) will be added to the scope of license renewal. LRA Tables 2.3.3-16 and 3.3.2-16 will be updated to include the component type "orifice".

RAI 2.3.3.16-4

License renewal drawings LRA-WCGS-KJ-M-12KJ03 and LRA-WCGS-KJ-M-12KJ06, at locations H-6 and H-7, show the lube oil auxiliary tanks for the standby diesel generator lube oil system TKJ04A and TKJ04B, respectively. These tanks are within the safety-related boundary and are highlighted in green for meeting the requirements of 10 CFR 54.4(a)(1). Each tank has several lines extending from them that also appear to be safety-related; however, these lines are not highlighted in green. The lines in question are portions of 071-HBD-1, 072-HBD-1, 052-HBD-1 1/2, 171-HBD-1, 172-HBD-1, and 152-HBD-1 1/2.

LRA Section 2.1 states that every component meeting the scoping criterion of 10 CFR 54.4(a)(1) was included within the scope of the license renewal rule. The staff requests that the applicant justify the exclusion of these lines from the scope of license renewal.

RAI 2.3.3.16-4 Response

Drawings LR-WCGS-KJ-M-12KJ03 and LR-WCGS-KJ-M-12KJ06 show piping lines 052-HBD-1 1/2, 071-HBD-1, 072- HBD-1, 152-HBD-1 1/2, 171-HBD-1, and 172-HBD-1 inside of safety-related boundary flags. However, isometric drawings for the piping lines show that the safety-related boundary is at the tank itself, and that the piping lines are not included in this boundary. These lines are non-safety-related Class HBD. Piping lines 071-HBD-1 and 171-HBD-1 are for tank oil fill. Piping lines 072-HBD-1 and 172-HBD-1 are tank overflow lines. Piping lines 052-HBD-1 1/2 and 152-HBD-1 1/2 are vent lines. These piping connections are above the tank's normal oil level and the tank is vented to atmosphere. Failure of the piping would not create a leakage path that would drain the tanks.

Piping 052-HBD-1 1/2, 071-HBD-1, 072- HBD-1, 152-HBD-1 1/2, 171-HBD-1, and 172-HBD-1 are not in the scope of license renewal.

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RAI 2.3.3.16-5

License renewal drawings LRA-WCGS-KJ-M-12KJ03 and LRA-WCGS-KJ-M-12KJ06, at locations H-5 and H-6, show standby diesel generator lube oil expansion tanks TKJ04A and TKJ04B, respectively. These tanks are within the safety-related boundary and are highlighted in green for meeting the requirements of 10 CFR 54.4(a)(1).

Each tank has a vent line extending from them that lead to the outside atmosphere that is not highlighted in green. The vent lines in question support the operation of the tanks by allowing free exchange of air in response to level changes in the tank. In addition, the vent lines appear to be located above the tank where internal corrosion products could fall into the tank. Failure of the vent lines could also allow moisture from the outside atmosphere to contaminate the lube oil.

Section 54.4 of 10 CFR requires that SSCs whose failure could prevent the satisfactory accomplishment of a safety-related SSC intended function, be included within the scope of license renewal. The staff requests that the applicant justify the exclusion of the vent lines from the scope of license renewal.

RAI 2.3.3.16-5 Response

The Auxiliary Lubricating Oil Makeup Tank is not required for at least seven days after the onset of continuous Standby Diesel Engine operation. The main engine sump is designed to provide sufficient oil for at least seven days without replenishment (UFSAR 9.5.7.2.1). The Auxiliary Lubricating Oil Makup Tank vent lines 052-HBD-1-1/2 and 152-HBD-1-1/2 have no intended function and are not in the scope of license renewal.

Auxiliary Lubricating Oil Makup Tank TKJ04A and TKJ04B vent lines (see piping 052-HBD-1-1/2, 152-HBD-1-1/2) are shown on plant isometric drawings as non-safety-related Class HBD. Tank TKJ04B has a short stretch of vertical piping directly above the tank (21" long), then the piping turns horizontal with a 20-degree negative slope. The piping eventually exits the structure. Tank TKJ04B has a similar vent arrangement. Corrosion products in the vent line that would fall into the tank would be limited to the vertical stretch of 1-1/2" diameter piping directly above the tanks (21" length for TKJ04B & 4ft-9" length for TKJ04A). Hence, based upon the vent line configuration, loss of tank function due to accumulation of corrosion products is not credible. Makeup oil from the tank is directed to strainers and filters before entering the engine. Strainers and filters maintain oil purity ensuring satisfactory operation of the engine (UFSAR 9.5.7.2.2).

RAI 2.3.3.16-6

License renewal drawings LRA-WCGS-KJ-M-12KJ03 and LRA-WCGS-KJ-M-12KJ06, at multiple locations; show at least three flexible connections in the standby diesel generator lube oil system. The flexible connections are within the safety-related boundary and are highlighted in green for meeting the requirements of 10 CFR 54.4(a)(1). The flexible connections are exposed to lubricating oil and provide a pressure boundary intended function.

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LRA Tables 2.3.3-16 and 3.3.2-16 do not identify flexible connections as a component type exposed to a lubricating oil environment. The staff requests that the applicant justify the exclusion of the flexible connections from the scope of license renewal in the lube oil portion of the emergency diesel engine system.

RAI 2.3.3.16-6 Response

Flexible Connections associated with the Standby Diesel Engine System (KJ) lube oil system will be added to LRA Table 2.3.3-16 and LRA Table 3.3.2-16.

Oily Waste System

RAI 2.3.3.18-1

License renewal drawing LR-WCGS-LE-M-12LE01 and LR-WCGS-LE-M-12LE02 show piping from the discharge of the auxiliary feed pump room sump pumps PLE12A and PLE12B, and the diesel generator building sump pumps PLE06A and PLE06B highlighted in red as non-safety related components affecting safety related components due to spatial interaction. However, the pumps are not highlighted even though they appear to be in close proximity to safety-related components. The staff requests that the applicant provide a description of the portions of the nonsafety-related oily waste system that are within the scope of license renewal in accordance with 10 CFR 54.4(a)(2) due to spatial interaction. In addition, the staff requests that the applicant discuss the reason for terminating the scoping boundaries where indicated.

RAI 2.3.3.18-1 Response

The discharge of the auxiliary feed pump room sump pumps, PLE12A and PLE12B, is in scope from the floor between Area 115 (Room 1128) and Area 125, and ends at the wall between the auxiliary building and the turbine building. There are no safety related components in the turbine building that would be affected by spatial interactions with the auxiliary feed pump room sump pump discharge piping. The sump pumps are submerged below the floor elevation of Room 1128 and are enclosed by the sump covers, thus do not have spatial interaction with safety related components above the floor.

Although there are no safety related components in Room 1128 that would be affected by the sump pumps discharge lines, it was determined that the LE piping in Room 1128 will be added to scope due to potential interaction with safety related components in the adjacent Room 1122. On license drawing LR-WCGS-LE-M-12LE01, this will add to scope the piping from the sump covers to the piping currently highlighted on LR-WCGS-LE-M-12LE01.

The discharge of diesel generator building sump pumps PLE06A/B/C/D is in scope from the sump covers in Area 511, through Area 132 in the auxiliary building where the discharge lines are merged, and ends at the penetration between Area 132 and Area 332. There are no safety related components in Area 332 that would be affected by the sump pump discharge lines. The diesel generator building sump pumps are submerged below

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the floor elevation and are enclosed by the sump covers, thus do not have spatial interaction with safety related components above the floor.

Miscellaneous Auxiliary Systems In-scope Only for Criterion 10 CFR 54.4(a)(2)

RAI 2.3.3.21-1

LRA Section 2.3.3.21 states that systems meeting the criterion of 10 CFR 54.4(a)(2) are within the scope of license renewal. The LRA states that each mechanical system was reviewed to determine whether safety-related systems could be adversely be impacted by nonsafety-related portions of systems.

Among the systems included in this LRA Section are nonsafety-related systems that have a potential for spatial interaction with safety-related portions of other systems. These system portions are shown in the drawings with a red highlight. The staff requests that the applicant address the following:

(1) License renewal drawing LR-WCGS-EA-M-12EA01, for the nonsafety-related service water system, shows system portions highlighted in red and ending with no further explanation. The staff requests that the applicant provide a description of the portions of the nonsafety-related service water system that are within the scope of license renewal for meeting the requirements of 10 CFR 54.4(a)(2) due to spatial interaction. In addition, he staff requests that the applicant discuss the reason for terminating the scoping boundaries where indicated.

(2) License renewal drawing LR-WCGS-LD-M-12LD01, for the chemical and detergent waste system, shows system portions highlighted in red and ending with no further explanation. The staff requests that the applicant provide a description of the portions of the chemical and detergent waste system that are within the scope of license renewal for meeting the requirements of 10 CFR 54.4(a)(2) due to spatial interaction. In addition, the staff requests that the applicant discuss the reason for terminating the scoping boundaries where indicated.

(3) License renewal drawing LR-WCGS-AN-M-12AN01, for the demineralized water makeup storage and transfer system, shows system portions highlighted in red and ending with no further explanation. The staff requests that the applicant provide a description of the portions of the demineralized water makeup storage and transfer system that are within the scope of license renewal for meeting the requirements of 10 CFR 54.4(a)(2) due to spatial interaction. In addition, the staff requests that the applicant discuss the reason for terminating the scoping boundaries where indicated.

(4) License renewal drawings LR-WCGS-KD-M-12KD01 and LR-WCGS-KD-M-12KD02, for the domestic water system, show system portions highlighted in red and ending with no further explanation. The staff requests that the applicant provide a description of the portions of the domestic water system that are within the scope of license renewal for meeting the requirements of 10 CFR 54.4(a)(2) due to spatial interaction. In addition, the staff requests that the applicant discuss the reason for terminating the scoping boundaries where indicated.

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(5) License renewal drawing LR-WCGS-GA-M-12GA02, for the plant heating system, shows system portions highlighted in red and ending with no further explanation. Additionally, references are made to drawings showing more detail of the boundaries, which are not included in the LRA. The staff requests that the applicant provide a description of the portions of the plant heating system that are within the scope of license renewal for meeting the requirements of 10 CFR 54.4(a)(2) due to spatial interaction. In addition, the staff requests that the applicant discuss the reason for terminating the scoping boundaries where indicated. In addition, the staff requests that the applicant provide the drawings referenced in LR-WCGS-GA-M-12GA02.

(6) License renewal drawing LR-WCGS-GB-M-12GB01, for the central chilled water system, shows system portions highlighted in red and ending with no further explanation. The staff requests that the applicant provide a description of the portions of the central chilled water system that are within the scope of license renewal for meeting the requirements of 10 CFR 54.4(a)(2) due to spatial interaction. In addition, the staff requests that the applicant discuss the reason for terminating the scoping boundaries where indicated.

(7) License renewal drawings LR-WCGS-HF-M-12HF01, LR-WCGS-HF-M-12HF02 and LR-WCGS-HF-M-12HF03, for the secondary liquid waste system, show system portions highlighted in red and ending with no further explanation. Additionally, references are made to drawings showing more detail of the boundaries, which are not included in the LRA. The staff requests that the applicant provide a description of the portions of the secondary liquid waste system that are within the scope of license renewal for meeting the requirements of 10 CFR 54.4(a)(2) due to spatial interaction. In addition, the staff requests that the applicant discuss the reason for terminating the scoping boundaries where indicated. Also, the applicant is requested to provide the drawings referenced in LR-WCGS-HF-M-12HF01, LR-WCGS-HF-M-12HF02 and LR-WCGS-HF-M-12HF03.

RAI 2.3.3.21-1 Response

(1) Service Water System
As shown on license renewal drawing LR-WCGS-EA-M-12EA01 service water system components are in the scope of license renewal for meeting the requirements for 10 CFR 54.4(a)(2) due to spatial interaction. Fluid filled service water components have spatial interaction with safety related components in the auxiliary building and in the control building.

Service water system piping lines EA002HBD-30, EA003HBD-30, EA058HBD-30 and EA059HBD-30 shown on license renewal drawing LR-WCGS-EA-M-12EA01 are in the scope of license renewal providing structural integrity to attached safety related piping. These piping lines are attached to safety related piping in the control building and have their in-scope termination where they become buried between the control building and the communication corridor.

Service water system piping lines EA004HBD-6 and EA005HBD-6 shown on license renewal drawing LR-WCGS-EA-M-12EA01 have their spatial interaction termination points where the fluid filled piping exits the auxiliary building and enters the turbine

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building. Since the turbine building contains no safety related components, the piping lines have their termination when they leave the auxiliary building.

(2) Chemical and Detergent Waste System
As shown on license renewal drawing LR-WCGS-LD-M-12LD01 chemical and detergent waste system components are in the scope of license renewal for meeting the requirements of 10 CFR 54.4(a)(2) due to spatial interaction. Fluid filled chemical and detergent waste system components have spatial interaction with safety related components in the auxiliary building and in the control building.

Chemical and detergent waste system piping lines LD042HCD-2 and LD027HCD-3 shown on LR-WCGS-LD-M-12LD01 have spatial interaction termination points where the fluid filled piping lines leave the auxiliary building and enter the radwaste tunnel, which has no safety related equipment.

(3) Demineralized Water Storage and Transfer System
As shown on license renewal drawing LR-WCGS-AN-M-12AN01 demineralized water storage and transfer system components are in the scope of license renewal for meeting the requirements of 10 CFR 54.4(a)(2) due to spatial interaction. Fluid filled demineralized water storage and transfer system components have spatial interaction with safety related components in the auxiliary building.

Demineralized water storage and transfer system piping line AN042HCD-3 as shown on LR-WCGS-AN-M-12AN01 has spatial interaction termination points where the fluid filled piping line leaves the auxiliary building and enter the radwaste pipe tunnel, which has no safety related components and where the fluid filled piping line leaves the auxiliary building and enters the turbine building, which has no safety related equipment.

Demineralized water storage and transfer system piping line AN050HCD-4 as shown on LR-WCGS-AN-M-12AN01 has a spatial interaction termination point where the fluid filled piping line leaves the auxiliary building and enters the communications corridor, which has no safety related equipment.

Demineralized water storage and transfer system piping line AN028HCD-2 as shown on LR-WCGS-AN-M-12AN01 has a spatial interaction termination point where the fluid filled piping line leaves the auxiliary building and enters the radwaste tunnel, which has no safety related equipment.

Demineralized water storage and transfer system piping lines AN004HCD-1, AN015HCD-2 and AN019HCD-1 as shown on LR-WCGS-AN-M-12AN01 have spatial interaction termination points where the fluid filled piping lines leave the turbine building enter the auxiliary building and then re-enter the turbine building, which has no safety related equipment.

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(4) Domestic Water System
As shown on license renewal drawing LR-WCGS-KD-M-12KD01 and LR-WCGS-KD-M-12KD02 domestic water system components are in the scope of license renewal for meeting the requirements of 10 CFR 54.4(a)(2) due to spatial interaction. Fluid filled domestic water system components have spatial interaction with safety related components in the auxiliary building, the control building and the fuel building.

Domestic water system boundary drawings LR-WCGS-KD-M12KD01 and LR-WCGS-KD-M-12KD02 have been revised to clarify domestic water component spatial interaction ends points. The revised drawings are provided in Enclosure 1.

(5) Plant Heating System
As shown on license renewal drawing LR-WCGS-GA-M-12GA02 plant heating system components are in the scope of license renewal for meeting the requirements of 10 CFR 54.4(a)(2) due to spatial interaction. Fluid filled plant heating system components have spatial interaction with safety related components in the auxiliary building, the control building and the fuel building.

Plant heating system piping lines GA095HBD-3 and GA096HBD-3 as shown on LR-WCGS-GA-M-12GA02 have spatial interaction termination points where fluid filled piping leaves the auxiliary building and enters the radwaste tunnel, which has no safety related equipment.

Plant heating system piping lines GA064HBD-1 ½ and GA065HBD-1 ½ as seen on LR-WCGS-GA-M-12GA02 have spatial interaction termination points where the fluid filled piping transitions from auxiliary building BLA (building, level, area) 133 to auxiliary building BLA 136, which contains no safety related equipment. The drawings referenced in LR-WCGS-GA-M-12GA02 for these piping lines have been provided in Enclosure 1.

Plant heating system piping lines GA003HBD-6 and GA090HBD-6 as shown on LR-WCGS-GA-M-12GA02 have spatial interaction termination points where the fluid filled piping transitions from the auxiliary building to the communications corridor, which, contains no safety related equipment. The drawings referenced in LR-WCGS-GA-M-12GA02 for these piping lines have been provided in Enclosure 1.

(6) Central Chilled Water System
As shown on license renewal drawing LR-WCGS-GB-M-12GB01 central chilled water system components are in the scope of license renewal for meeting the requirements of 10 CFR 54.4(a)(2) due to spatial interaction. Fluid filled central chilled water system components have spatial interaction with safety related components in the auxiliary building.

Central chilled water system piping lines GB061HBD-3 and GB072HBD-3 as shown on LR-WCGS-GB-M-12GB01 have spatial interaction termination points where the fluid filled piping transitions from the auxiliary building to the radwaste tunnel, which contains no safety related equipment.

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Central chilled water system piping lines GB037HBD-1 and GB038HBD-1 as shown LR-WCGS-GB-M-12GB01 have spatial interaction termination points where the fluid filled piping transitions from auxiliary building BLA (building, level, area) 133 to auxiliary building BLA 136, which contains no safety related equipment.

Central chilled water system piping line GB065HBD-8 as shown on LR-WCGS-GB-M12GB01 has a spatial interaction termination point where the fluid filled piping transitions from the auxiliary building to the communications corridor, which has no safety related equipment.

Central chilled water system piping line GB008HBD-8 as shown on LR-WCGS-GB-M-12GB01 has a spatial interaction termination point where the fluid filled piping transitions from the auxiliary building to the communications corridor, which has no safety related equipment.

Central chilled water system piping lines GB016HBD-1 ½ and GB015HBD-1 ½ as shown on LR-WCGS-GB-M-12GB01 have spatial interaction termination points where fluid filled piping transitions from the control building to the communications corridor, which contains no safety related equipment.

(7) Secondary Liquid Waste System
As shown on license renewal drawing LR-WCGS-HF-M-12HF01, LR-WCGS-HF-M-12HF02 and LR-WCGS-HF-M-12HF03 secondary liquid waste system components are within the scope of license renewal for meeting the requirements of 10 CFR 54.4(a)(2) due to spatial interaction. Fluid filled secondary liquid waste system components have spatial interaction with safety related components in the auxiliary building.

Secondary liquid waste system piping lines HF275HCD-2 as shown on LR-WCGS-HF-M-12HF01 and HF165HCD-3 as shown on LR-WCGS-HF-M-12HF03 have spatial interaction termination points where the fluid filled piping transitions from the communications corridor, which has no safety related equipment, to the auxiliary building. These piping lines also have spatial interaction termination points where the fluid filled piping transitions from the auxiliary building to the radwaste tunnel, which has no safety related equipment.

Secondary liquid waste system piping line HF107-HBD-3 as shown on LR-WCGS-HF-M-12HF02 has a spatial interaction termination point where the fluid filled piping transitions from the auxiliary building to the radwaste tunnel, which has no safety related components. This piping line also has a spatial interaction termination point where the fluid filled piping transitions from the auxiliary building to the turbine building, which contains no safety related piping.

The drawings referenced in boundary drawings LR-WCGS-HF-M-12HF01, LR-WCGS-HF-M-12HF02 and LR-WCGS-HF-M-12HF03 have been provided in Enclosure 1.

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Condensate System

RAI 2.3.4.4-1

License renewal drawing LR-WCGS-AD-M-12AP01, at locations D-3, D-4, E-3, E-4, and G-3, shows penetrations to the condensate storage tank TAP01 that are not highlighted in green. However, the tank shell is highlighted in green indicating that it meets the requirements of 10 CFR 54.4(a)(3). The penetrations are for LT-0004, TE-0005, LSL-0010, low pressure N2, and LSH-007.

USAR Section 8.3A.3.4 states that the coping duration for a station blackout is four hours. Further, USAR Section 8.3A.5.1 states that a minimum of 156,300 gallons of condensate storage tank inventory is required for decay heat removal for the four hour coping period. Failure of a tank penetration could cause drainage of the inventory below the required minimum. The staff requests that the applicant justify the exclusion of the penetrations from the scope of license renewal.

RAI 2.3.4.4-1 Response

The condensate storage tank (CST) is a non-safety related component that is required for station blackout (SBO) in accordance with 10 CFR 54.4(a)(3) and is highlighted as green on License Renewal Boundary Drawing LR-WCGS-AD-M-12AP01. The penetrations for LT-0004, TE-0005, LSL-0010, low pressure N2, and LSH-007 are also non-safety related but should be shown as green on Boundary Drawing LR-WCGS-AD-M-12AP01 to protect the integrity of the CST during SBO. The piping and components associated with these changes will be included within the scope of license renewal. Component groups currently exist for these changes, therefore no changes are required to LRA Tables 2.3.4-4 and 3.4.2-4.

RAI 2.3.4.4-2

License renewal drawing LR-WCGS-AD-M-12AP01, at locations G-2, G-3, and G-4, shows vents and vacuum relief valves on the condensate storage tank TAP01 that are not highlighted in green. However, the tank shell is highlighted in green indicating that it meets the requirements of 10 CFR 54.4(a)(3). The vent lines in question support the operation of the tanks by allowing free exchange of air in response to level changes in the tank. In addition, the vent lines appear to be located above the tank where internal corrosion products could fall into the tank. Failure of the vents could cause damage to the condensate storage tank. The staff requests that the applicant justify the exclusion of the vents from the scope of license renewal.

RAI 2.3.4.4-2 Response

The CST is a non-safety related component that is required for SBO in accordance with 10 CFR 54.4(a)(3) and is highlighted as green on License renewal drawing LR-WCGS-AD-M-12AP01. The tank vent lines and vacuum relief valves are also non-safety related. These components should be shown as green on Boundary Drawing LR-WCGS-AD-M-12AP01 to protect the integrity of the CST during SBO. The piping and components

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associated with the tank vent lines and vacuum relief valves will be included within the scope of license renewal.

RAI 2.3.4.4-3

License renewal drawing LR-WCGS-AD-M-12AP01, at locations F-3 and F-4, show external steam heating coils EAP01A, EAP01B, and EAP01C attached to the condensate storage tank not highlighted in green. The steam heating coil steam and drainage lines and their controls are also not highlighted in green. However, the tank shell is highlighted in green indicating that it meets the requirements of 10 CFR 54.4(a)(3).

USAR Section 8.3A.3.4 states that the coping duration for a station blackout is four hours. Further, USAR Section 8.3A.5.1 states that a minimum of 156,300 gallons of condensate storage tank inventory is required for decay heat removal for the four hour coping period. Additionally, USAR Section 9.2.6.2.2 states that freeze protection is provided by thermal insulation and external steam heating coils. USAR Section 9.2.6.5 states that the nominal minimum temperature for the condensate storage tank is 50 °F. The steam supply to the steam heating coils is from the nonsafety-related auxiliary steam system and would not be available during a station blackout. The staff requests that the applicant justify the exclusion of either the steam heating coils and/or the tank insulation from LRA Tables 2.3.4-4 and 3.4.4-4 as a component types within the scope of license renewal.

RAI 2.3.4.4-3 Response

The CST is a non-safety related component that is within the scope of license renewal to support SBO requirements based on the criteria of 10 CFR 54.4(a)(3). It is highlighted as green on License Renewal Boundary Drawing LR-WCGS-AD-M-12AP01. The CST auxiliary steam heating components and CST insulation are also non-safety related. These components are mentioned in the USAR but the USAR does not state the components are required to remain functional during and following design basis events nor do they support SBO requirements. The WCGS Technical Specifications require a minimum of 281,000 gallons of water in the CST during normal operations. USAR Section 9.2.6.5 states that CST water be at least 50 degrees F during normal operations. The initial condition of 50 degree F water temperature is verified during normal plant operation. USAR Section 9.2.6 describes power generation basis for the Condensate Storage and Transfer System and does not describe any safety basis.

The Technical Specifications required water volume is sufficient to assure mitigation of a design basis event without associated non-safety related components. Therefore CST auxiliary steam heating and CST insulation have no intended functions and are not required to remain functional during and following design basis events nor support SBO requirements and are not within the scope of license renewal.

Attachment II

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RAI 2.3.3.14-1
RAI 2.3.3.14-2
RAI 2.3.3.14-3
RAI 2.3.3.14-4
RAI 2.3.3.14-5
RAI 2.3.3.14-6

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Fire Protection System

RAI 2.3.3.14-1

The LRA drawings listed below show fire protection system components not highlighted in green indicating that they are outside the scope of license renewal. The staff requests that the applicant verify whether these components are within the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an aging management review (AMR) in accordance with 10 CFR 54.21(a)(1). If not, the staff requests that the applicant provide a justification for their exclusion.

(a) LR-WCGS-KC-M-0022-1, "Plant Service Water System," shows the following components outside the scope of license renewal:

- one out of the four vertical pumps (1WS002P) and its associated components
- several flow drains (1W30102, 1W30103, etc.)

(b) LR-WCGS-KC-M-0023-1, "Fire Protection Water System," shows the following components outside the scope of license renewal:

- fire hydrant (1FP0138) and its associated components
- several flow drains

(c) LR-WCGS-KC-M-0023-2, "Fire Protection System," shows the following components outside the scope of license renewal:

- several valves

(d) LR-WCGS-KC-M-0028, "Diesel Oil System," shows the following components outside the scope of license renewal:

- flame arrester vent line
- fill cap assembly

(e) LR-WCGS-KC-M-12KCO1, "Fire Protection Turbine Building," shows the following components outside the scope of license renewal:

- several line valves
- several sprinkler heads

(f) LR-WCGS-KC-M-12KCO2, "Fire Protection System," shows the following components outside the scope of license renewal:

- several flow drains (reactor building, communications corridor, and auxiliary feedwater pipe chase area)
- valves V0281 and V04323 (communications corridor)
- sprinkler system (auxiliary boiler room)
- drain valve V0859 (auxiliary feedwater pipe chase area)

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- several drains and valves (reactor building)
- lines and two valves (generator rooms A and B)

(g) LR-WCGS-KC-M-12KCO3, "Fire Protection System," shows the following components outside the scope of license renewal:

- several drain valves

RAI 2.3.3.14-1 Response

In the following discussions, portions of the fire protection system that do not support Wolf Creek Post Fire Safe Shutdown requirements or are not identified in the Wolf Creek response to APCSB 9.5-1 Appendix A in USAR Table 9.5A-1 are identified as having no license renewal intended functions based on fire protection criteria of 54.4(a)(3). Interactions of fire protection system components with safety-related equipment were also evaluated to determine if the components have a license renewal intended function and should be added to the scope of license renewal.

a) LR-WCGS-KC-M-0022-1:

Pump 1WS002P
Pump 1WS002P is a low flow, low capacity pump called the Low Flow and Startup Pump. The Low Flow and Startup Pump is used during startup conditions or low flow conditions to maintain the Service Water system header at a minimum pressure to prevent service water pump run out (USAR 9.2.1.1.2.3). The Low Flow and Startup Pump has no license renewal intended function.

Several Flow Drains
Circulating Water Screenhouse. There is no safety-related equipment in the Circulating Water Screenhouse that can be affected by fluid filled piping spatial interaction of the flow drains. The flow drains do not have a license renewal intended function.

(b) LR-WCGS-KC-M-0023-1:

Fire Hydrant
Fire Hydrant 1FP0138 and its associated components located outside the Circulating Water Screenhouse do not have a license renewal intended function.

Several Flow Drains
Circulating Water Screenhouse. There is no safety-related equipment in the Circulating Water Screenhouse that can be affected by fluid filled piping spatial interaction of the flow drains. The flow drains do not have a license renewal intended function.

(c) LR-WCGS-KC-M-0023-2:

Several Valves

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These valves supply water to portions of the fire water suppression system (e.g. security building, shop building, etc.) that do not support Wolf Creek Post Fire Safe Shutdown requirements nor are they identified in the Wolf Creek response to APCSB 9.5-1 Appendix A in USAR Table 9.5A-1. The valves do not have a license renewal intended function.

(d) LR-WCGS-KC-M-0028:

Flame Arrestor Vent Line & Fill Cap Assembly:
Flame arrestors vent line 1DO008A-2, Diesel Fire Pump Engine oil-return flame arrestor vent line 1DO0016A-1/2, and fill cap line 1DO007A-3 will be added to the scope of license renewal. LRA Table 2.3.3-14 and LRA Table 3.3.3-14 will be revised for the new components.

(e) LR-WCGS-KC-M-12KCO1:

See response to RAI 2.3.3.14-5 for portions of the fire suppression system that are excluded from the scope of license renewal and the justification for the exclusion.

(f) LR-WCGS-KC-M-12KCO2:

Communication Corridor:
These vent and drain valves are located in the Communications Corridor. There is no safety-related equipment in the Communications Corridor that can be affected by fluid filled piping spatial interaction. The components within the scope of license renewal in the Communications Corridor are only those components with a fire protection intended function. The Communication Corridor components that are in-scope are piping and piping components associated with fire hose reels and fire hose connections. Valves V0281 and V0423 do not have a license renewal intended function.

Auxiliary Boiler Room:
See response to RAI 2.3.3.14-5 for portions of the fire suppression system that are excluded from the scope of license renewal.

Auxiliary Feedwater Pipe Chase: Drain valve V0859 does not have a license renewal intended function. There is no safety-related equipment outside of the Auxiliary Feedwater Pipe Chase Area (in the vicinity of V0859) that can be affected by fluid filled piping spatial interaction. The only components in-scope outside of the Auxiliary Feedwater Pipe Chase Area are fire protection components.

Reactor Building:
The hose stations and sprinkler systems in the reactor building are isolated and drained during normal plant operation. Failure of vent & drain valves would not affect safety-related equipment through spatial interaction. The components within the scope of license renewal in the reactor building are only those components with a fire protection

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intended function. The vent & drain components in the Reactor Building do not have a license renewal intended function.

Diesel Generator Rooms:
The lines and valves are part of the service air system. There is no potential for spatial interaction with this air-filled piping. The service air system is evaluated in LRA section 2.3.3.6 - Compressed Air.

(g) LR-WCGS-KC-M-12KCO3:

Radwaste Building:
These vent and drain valves are located in the Radwaste Building. There is no safety-related equipment in the Radwaste Building that can be affected by fluid filled piping spatial interaction. The components within the scope of license renewal in the Radwaste Building are only those components with a fire protection intended function. The Radwaste Building components that are in-scope are piping and piping components associated with fire hose reels, sprinklers and fire hose connections. Vent & Drain valves and piping in the Radwaste Building do not have a license renewal intended function

RAI 2.3.3.14-2

NUREG-0881, Supplement 5, Section 9.5.1.1, states that the fire pumps take suction from a common wet pit sump in the circulating water screenhouse. Two traveling water screens and the bar grill are located at the inlet to the sump serving the fire pumps. LRA Section 2.3.3.14 and Table 2.3.3.14 do not clearly state whether the traveling water screens and bar grill are included within the scope of license renewal. The staff requests that the applicant verify whether the traveling water screens and bar grill and their associated components are within the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If not, the staff requests that the applicant provide a justification for their exclusion.

RAI 2.3.3.14-2 Response

Traveling screens (and bar grill) are part of the Service Water system. The Service Water system is not required for the safe shutdown of the plant. Traveling screens remove debris from the circulating and service water system flow path to prevent plugging of the condenser water box inlets and loss of service water flow.

During emergency operations, the circulating water pumps are unnecessary and, in fact, may be unavailable due to a loss of offsite power. For normal and emergency operations without the circulating water pumps operating, a much lower volume of water flows through the traveling screens. The lower flow rates make it unlikely that debris could clog the traveling screens and prevent them from passing adequate flow. An open pipe connecting to the adjacent sump in the circulating water screenhouse is provided as a second source of water to the fire pumps. There are four 12-inch diameter pipe connections between the fire pump screenhouse sump and the adjacent circulating

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water screenhouse sump. In the event of blockage of water flow through the traveling screens in the fire pump sump, one connection between bays and one operational traveling screen is all that is required to provide adequate fire water.

The traveling screens perform their function with moving parts and can be rotated and backwashed, manually or automatically, due to differential pressure across the screens. These components are considered active.

Thus, the traveling screens and bar grill are not within the scope of 10 CFR 54.4(a) and are not subject to aging management review.

RAI 2.3.3.14-3

NUREG-0881, Supplement 5, Section 9.5.1.2, states that where safe-shutdown equipment is enclosed by a fire barrier, all walls, ceilings, floors, and associated penetrations that enclose the equipment have a minimum fire rating of three hours. LRA Section 2.3.3.14 and Table 2.3.3.14 do not clearly state whether fire barrier walls, ceilings, floor, slabs, and associated penetration seals are included within the scope of license renewal. The staff requests that the applicant verify whether these fire barrier walls, ceilings, floor, slabs, and associated penetration seals are within the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If not, the staff requests that the applicant provide a justification for their exclusion.

RAI 2.3.3.14-3 Response

As noted in the last sentence of the System Description in LRA Section 2.3.3.14, "Other passive fire barriers are screened as part of the structures." Each in-scope structure is discussed separately in Section 2.4. Those structures that are required to support fire protection include a statement to that effect in the Structure Function discussion. The Component-Function Relationship tables in Section 2.4 show fire barrier as one of the intended functions for the component types that are credited as part of the fire protection system. For example, Table 2.4-2, Control Building, lists the fire barrier function for component types Concrete Block (masonry walls), Concrete Elements, Fire Barrier Coatings/wraps, Fire Barrier Doors, and Fire Barrier Seals. Therefore, fire barrier elements are within the scope of license renewal and subject to AMR.

RAI 2.3.3.14-4

LRA Table 2.3.3-14 excludes several types of fire protection components that are listed in NUREG-0881, Supplement 5, and/or the plant's Updated Safety Analysis Report (USAR). In addition, the LRA drawings highlighted them in green as components within the scope of license renewal. The staff requests that the applicant verify whether the component listed below should be included in LRA Table 2.3.3.14. If not, the staff requests that the applicant provide a justification for their exclusion.

- hose connections
- hose racks
- sight glass
- strainer housing

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- pipe fittings
- pipe supports
- couplings
- threaded connections
- restricting orifices
- interface flanges
- chamber housings
- heat-actuated devices
- gauge snubbers
- tank heaters
- Halon 1301 storage cylinders
- thermowells
- water motor alarms
- expansion joint
- filter housing
- gear box housing
- heat exchanger (bonnet)
- heat exchanger (shell)
- heat exchanger (tube)
- heater housing
- engine muffler (diesel driven fire pump)
- engine intake and exhaust silencers (diesel driven fire pump)
- orifice
- turbocharger housing
- flexible hose
- latch door pull box
- pneumatic actuators
- actuator housing
- dikes
- storage tanks (fire water system)
- buried underground fuel oil tanks
- expansion tank
- jacket cooling water keepwarm pump and heater
- lubricating oil collection system components (reactor coolant pumps)
- lubricating oil cooler
- auxiliary lubricating oil makeup tank
- rocker lubricating oil pump
- water floor drains
- flame retardant coating for cables
- fire barrier penetration seals
- fire barrier walls, ceilings, floor, and slabs
- fire doors
- fire rated enclosures
- fire retardant coating for structural steel supporting wall and ceiling

RAI 2.3.3.14-4 Response

The Fire Protection System as used herein includes components from the Fire Protection system (KC - Power Block), the Fire Protection system (FP-Non-Power Block), the Diesel Oil system (DO) and the Service Water system (EA).

Hose connections – Hose connections are included in the "Valve" line item in LRA Table 2.3.3-14.

Hose racks – Hose racks are included in the "Hose Station" line item in LRA Table 2.3.3-14.

Pipe fittings – The component type of "piping" used on LRA Table 2.3.3-14 includes piping fittings. This is consistent with the definition of piping, piping components, and piping elements noted in NUREG-1801 Chapter IX.B.

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Pipe supports – Pipe supports were evaluated as a structural commodity group. Fire Protection pipe supports are included in the "Supports, Mechanical Equipment Non-ASME" component type on Table 2.4-22.

Coupling – The component type of "piping" used on LRA Table 2.3.3-14 includes couplings. This is consistent with the definition of piping, piping components, and piping elements noted in NUREG-1801 Chapter IX.B.

Threaded connections – The component type of "piping" used on LRA Table 2.3.3-14 includes threaded connections. This is consistent with the definition of piping, piping components, and piping elements noted in NUREG-1801 Chapter IX.B.

Restricting orifices – Restricting orifices with unique component numbers are identified by component type "Orifice". There are no orifices in the Fire Protection system with unique component identification numbers.

Interface flanges – The component type of "piping" used on LRA Table 2.3.3-14 includes interfacing flanges. This is consistent with the definition of piping, piping components, and piping elements noted in NUREG-1801 Chapter IX.B.

Chamber housing – The component type of "piping" used on LRA Table 2.3.3-14 includes chamber housing. This is consistent with the definition of piping, piping components, and piping elements noted in NUREG-1801 Chapter IX.B. The only component in the Fire Protection component list specifically identified as a "Chamber" is the foam maker chamber housing. The foam maker chamber housing is part of the foam suppression system for the fuel oil storage tank. The foam fire suppression system is a manually operated foam extinguishing system located in the fuel oil pumphouse. The fuel oil pumphouse is protected to satisfy NEIL property protection requirements, has no intended function and is not within the scope of license renewal.

Heat actuated devices – Heat actuated devices are active electrical components within the scope of license renewal but not subject to aging management review. Electrical component evaluations are described in LRA section 2.5.

Gauge snubbers – Gauge snubbers are integral parts of tubing runs that protect instrumentation from pressure surges. Gauge snubbers in tubing runs to instruments are included in the "tubing" line item in LRA Table 2.3.3-14.

Tank heaters – Tank Heaters are active electrical components within the scope of license renewal but not subject to aging management review. Electrical component evaluations are described in LRA section 2.5. Tank heater housings are subject to aging management review if they serve a pressure boundary function. There are no tank heaters with a pressure boundary function in the Fire Protection system.

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Halon 1301 storage cylinders – The component type of "tank" used on LRA Table 2.3.3-14 includes Halon 1301 storage cylinders. This is consistent with the definition of piping, piping components, and piping elements noted in NUREG-1801 Chapter IX.B.

Thermowells – The component type of "piping" used on LRA Table 2.3.3-14 includes thermowells. This is consistent with the definition of piping, piping components, and piping elements noted in NUREG-1801 Chapter IX.B.

Water motor alarms – Water motor alarms are water flow alarms used to provide positive indication of fire water system operation. Water motor alarms are active electrical components within the scope of license renewal but not subject to aging management review. Electrical component evaluations are described in LRA section 2.5.

Expansion joints – Expansion joints with unique component numbers are identified by component type "Expansion joint". There are no expansion joints in the Fire Protection system with unique component identification numbers.

Filter housing – Filter housings in scope for the Fire Protection system are evaluated as part of the component type "Filter" in LRA Table 2.3.3-14 and include intended functions for both pressure boundary and filter.

Gear box housing – Gear boxes associated with the Fire Protection system do not have unique component identification numbers. Gear boxes that may be part of a large skid assembly, (e.g. fire pump diesel) are evaluated as part of that larger component.

Heat exchanger – The Diesel driven Fire Pump Engine has an integral oil cooler. The oil cooler is integral to the diesel engine and is evaluated as part of the engine. The diesel engine is an active component and not subject to aging management review.

Heater housings – Heater housings are subject to review if they serve a pressure boundary function. There are no heater housings in the Fire Protection system.

Engine muffler (diesel driven fire pump) – The Diesel driven Fire Pump Engine muffler will be added to the scope of license renewal as a "Piping" component type in LRA Table 2.3.3-14.

Engine intake and exhaust silencers (diesel driven fire pump) – Intake/Exhaust silencers associated with the Fire Protection system do not have unique component identification numbers. The fire pump diesel engine is an active component and not subject to aging management review. The diesel engine air intake is integral to the engine and evaluated as part of the engine. The diesel fire pump engine exhaust has unique component numbers (see Engine muffler above).

Orifice –Orifices with unique component numbers are identified by component type "Orifice". There are no orifices in the Fire Protection System with unique component identification numbers.

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Sight glass – Sight glasses are included in the component type "sight gauge". Sight gauge 1LIDO001 Diesel Oil Day Tank level indicator was inadvertently scoped as an electrical instrument. The sight gauge will be removed from the ELEC System and re-scoped as a mechanical component in system DO (Diesel Oil) and System KC (Fire Protection). Component type "sight glass" will be added to LRA Table 2.3.3-14 and Table 3.3.2-14.

Strainer housing –Strainer housings in scope for the Fire Protection System are evaluated as component type "Strainer".

Turbocharger housing – The diesel driven fire pump is not turbocharged.

Flexible hose – Flexible hoses in scope for the Fire Protection System are listed as generic component type "Flexible hoses".

Latch door pull box – The Latch Door Pull Box on a carbon dioxide/halon system is used to provide mechanical operation of the Stop/Selector Valve and/or the Local Lever Actuator from a remote location. The Latch Door Pull Box has a door that must be opened in order to access the pull handle. The latch door pull box is in the scope of license renewal but is an active component and not subject to aging management review.

Pneumatic actuator – 10 CFR 54.21(a)(1)(i) excludes valves, other than the valve body, from AMR. The statements of consideration of the license renewal rule provide the basis for excluding structures and components that perform their intended functions with moving parts or with a change in configuration or properties. Although the valve body is subject to an AMR, the pneumatic actuator is not.

Actuator housing – The component type of "Valve (including hydrant)" used on LRA Table 2.3.3-14 includes actuator housing.

Dikes – No outdoor tanks fall under the D(augmented) classification as established by Regulatory Guide 1.26, and no dikes are provided.

Storage tanks (fire water system) – The only fire water tank used at WCGS is located in Administration Building B. The Administration Building fire water tank has no intended function and is not within the scope of license renewal.

Buried underground fuel tanks – The fuel oil tank for the diesel driven fire pump is located above ground.

Expansion tank – The Fire Protection System includes many tanks including the diesel oil day tanks, halon storage tanks, foam concentrator tank, and propane tanks. There are no tanks specifically called an "expansion" tank. Tanks within the scope of license renewal are included in the "Tank" line item in LRA Table 2.3.3-14.

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Jacket cooling water keepwarm pump and heater – There are no Jacket cooling water keepwarm pumps and heaters associated with the Fire Protection System.

Lubricating oil collection system components (reactor coolant pumps) – The reactor coolant pump lubricating oil collection system components will be added to the scope of license renewal.

Lubricating oil cooler - The Diesel driven Fire Pump Engine has an integral oil cooler. The oil cooler is integral to the diesel engine and is evaluated as part of the engine. The diesel engine is an active component and not subject to aging management review.

Auxiliary lubricating oil makeup tank - The Fire Protection system includes the diesel oil day tank. The diesel oil day tank is within the scope of license renewal and is included in the "Tank" line item in LRA Table 2.3.3-14.

Rocker lubricating oil pump - There are no rocker lubricating oil pumps associated with the Diesel Fire Pump engine. Rocker oil pumps associated with the Emergency Diesel Engine system are within the scope of license renewal and are included in in the "Pump" line item in LRA Table 2.3.3-16.

Water floor drains - Floor drains are evaluated in the Floor and Equipment Drains system and Oily Waste system. LRA Sections 2.3.3.17 and 2.3.3.18.

Flame retardant coating for cables - There are no flame retardant coatings for cables at WCGS. Cables are protected by ceramic fiber wraps, which are evaluated as a structural commodity type of "fire barrier coatings/wraps" included in the structures evaluations of section 2.4 of the LRA.

Fire barrier penetration seals – Fire barrier penetration seals are evaluated as a structural commodity type of "fire barrier seals" included in the structures evaluations of section 2.4 of the LRA.

Fire barrier walls, ceilings, floor and slabs – These are structural commodity group elements and are evaluated as structural commodity type of "concrete elements" included in the structures evaluations of section 2.4 of the LRA.

Fire doors – Fire doors are evaluated as a structural commodity type of "fire barrier doors" included in the structures evaluations of section 2.4 of the LRA.

Fire rated enclosures - Fire rated enclosures that protect individual components, such as cable tray, are evaluated as a structural commodity type of "fire barrier coatings/wraps". Fire rated enclosures that protect rooms or buildings are evaluated as a structural commodity type of "concrete elements" or "concrete block (masonry walls)". All of these component types are included in the structures evaluations of section 2.4 of the LRA.

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Fire retardant coating for structural steel supporting wall and concrete – Fire retardant coating for structural steel supporting wall and concrete are evaluated as a structural commodity type of "fire barrier coatings/wraps" included in the structures evaluations of section 2.4 of the LRA.

RAI 2.3.3.14-5

USAR Table 9.5.1-2 lists various types of fire water suppression systems. The staff requests that the applicant verify whether the fire water suppression systems in the areas listed below are within the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If not, the staff requests that the applicant provide a justification for their exclusion.

Manual pre-action sprinkler system:

- north cable penetration (inside containment)
- south cable penetration (inside containment)

Automatic water spray system:

- hydrogen seal oil unit
- main transformer
- startup transformer
- auxiliary transformer
- station service transformer
- engineered safety feature transformer

Automatic pre-action sprinkler system:

- fuel building rail road bay
- lower cable spreading room
- upper cable spreading room
- cable trays (auxiliary building elevation 1974'-0", 2000'-0", 2026'-0")
- diesel generator rooms
- area below turbine generator (operating floor and mezzanine floor)
- turbine generator

Manual water spray system:

- auxiliary feedwater pump (turbine driven)
- steam generator feed pump

Automatic wet-pipe sprinkler system:

- turbine lube oil storage room
- auxiliary boiler room
- turbine lube oil reservoir room
- condenser pit (area beneath the main condensers)
- dry waste compactor (radwaste building)
- access control area (control building)
- pipe space and tank area (control building)
- cable area above access control area
- vertical cable chases (auxiliary building)
- vertical cable chases (control building)
- auxiliary feedwater pipe chase area (auxiliary building)
- turbine building outage office

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RAI 2.3.3.14-5 Response

The various types of fire water suppression systems are listed below. The first group are those within the scope of license renewal. The second grouping are those not within the scope of license renewal. The license renewal drawing references and locations for each piping segment are provided for convenience (Note: the LR-WCGS-KC drawing prefix was omitted to simplify the presentation).

The following fire water suppression systems are in the scope of license renewal:

Manual pre-action sprinkler system:	
• north cable penetration (inside containment)	**M-12KC02 (C-4)**
• south cable penetration (inside containment)	**M-12KC02 (D-4)**
Automatic pre-action sprinkler system:	
• fuel building rail road bay	**M-12KC03 (A-3)**
• lower cable spreading room	**M-12KC05 (F-3)**
• upper cable spreading room	**M-12KC05 (H-3)**
• cable trays (aux bldg El. 1974', 2000', 2026')	**M-12KC05 (D-6, F-6, G-6)**
• diesel generator rooms	**M-12KC02 (G-7, F-7)**
Manual water spray system:	
• auxiliary feedwater pump (turbine driven)	**M-12KC02 (B-2)**
Automatic wet-pipe sprinkler system:	
• turbine lube oil storage room	**M-12KC01 (C-5)**
• turbine lube oil reservoir room	**M-12KC01 (C-6)**
• dry waste compactor (radwaste building)	**M-12KC03 (D-3)**
• access control area (control building)	**M-12KC02 (G-4)**
• pipe space and tank area (control building)	**M-12KC05 (E-2)**
• cable area above access control area	**M-12KC05 (B-7)**
• vertical cable chases (auxiliary building)	**M-12KC05 (B-6, B-7)**
• vertical cable chases (control building)	**M-12KC05 (D-3)**
• auxiliary feedwater pipe chase area (auxiliary building)	**M-12KC02 (B-1)**
• Radwaste Storage Bldg (not listed on RAI)	**M-12KC03 (G-5)**

The following fire water suppression systems are not within the scope of license renewal. These portions of the fire water suppression system do not support Wolf Creek Post Fire Safe Shutdown requirements nor are they identified in the Wolf Creek response to APCSB 9.5-1 Appendix A in USAR Table 9.5A-1.

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Automatic pre-action sprinkler system:	
• area below turbine generator (oper. flr & mezz. flr)	**M-12KC01 (A-7,D-4,D-5,D-7)**
• turbine generator	**M-12KC01 (A-5)**
Manual water spray system:	
• steam generator feed pump	**M-12KC01 (E-6, E-7)**
Automatic water spray system:	
• hydrogen seal oil unit	**M-12KC01 (D-3)**
• main transformer	**M-12KC01 (E-2)**
• startup transformer	**M-12KC01 (H-2)**
• auxiliary transformer	**M-12KC01 (D-2)**
• station service transformer	**M-12KC01 (H-5)**
• engineered safety feature transformer	**M-12KC01 (H-7)**
Automatic wet-pipe sprinkler system:	
• auxiliary boiler room	**M-12KC02 (A-3)**
• condenser pit (area beneath the main condensers)	**M-12KC01 (A-6)**
• turbine building outage office	**M-12KC01 (E-5)**

RAI 2.3.3.14-6

LRA Section 2.3.3.14 discusses the total flooding Halon 1301 fire suppression system for control room trenches and chases, switchgear rooms, engineered safety feature switchgear rooms, motor-generator sets room, and electrical penetration rooms. USAR Table 9.5.1-2 also discusses the total flooding Halon 1301 fire suppression system for non-vital switchgear and transformer rooms, control cabinets, and load centers. However, the total flooding Halon 1301 fire suppression system for non-vital switchgear and transformer rooms, control cabinets, and load centers does not appear in LRA Section 2.3.3.14 as within the scope of the license renewal. The staff requests that the applicant verify whether the total flooding Halon 1301 fire suppression system for non-vital switchgear and transformer rooms, control cabinets, and load centers are within the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If not, the staff requests that the applicant provide a justification for their exclusion.

RAI 2.3.3.14-6 Response

The Halon 1301 fire suppression system for non-vital switchgear and transformer rooms, control cabinets, and load centers was evaluated and is within the scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). License renewal boundary drawing LR-WCGS-KC-M12KC04 (locations E-2 & E-6) show the non-vital switchgear and transformer rooms. License renewal drawing LR-WCGS-KC-M12KC06 (location B-8) show the control cabinet and load centers.

Attachment III

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Dated April 4, 2007

RAI 2.1-1
RAI 2.1-2
RAI 2.1-3
RAI 3.0.4-1

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Dated April 4, 2007**

RAI 2.1-1

LRA Section 2.1.2.1 states that safety-related classifications for systems and structures at Wolf Creek Generating Station (WCGS) are reported in the updated safety analysis report (USAR) or in design basis documents such as engineering drawings, evaluations, or calculations. Safety-related classifications for components are documented on engineering drawings and in the WCGS Q-List. The safety-related classification as reported in these source documents has been relied upon to identify SSCs satisfying one or more of the criteria of 10 CFR 54.4(a)(1). These SSCs have been identified as within the scope of license renewal.

However, during the audit the staff noted that source documents, such as USAR Section 3.2, and procedures AP 05-007, Section 6.1.4, and AP 23M-001, Section 4.17.1, have differing definitions for the term safety-related. In addition, these documents currently cite superseded regulatory text for establishing the scoping criteria to be used in identifying SSCs in accordance with 10 CFR 54.4(a)(1) requirements.

The staff requests that the applicant addresses the impact, if any, of the use of differing definition of safety-related. In addition, the applicant is requested to address the impact of not having considered these different definitions in its scoping methodology for those SSCs that are relied upon to ensure "the capability to prevent or mitigate the consequences of accidents that could result in potential off-site exposures comparable to the guidelines in 10 CFR Sections 50.34(a)(1), 50.67(b)(2), or 100.11 of this chapter, as applicable," consistent with the facility's current licensing basis.

RAI 2.1-1 Response

The term "safety related" is defined in WCGS USAR Section 3.2 (Classification of Structures Components and Systems), Procedure, AP 23M-001, "Maintenance Rule Program", and Procedure, AP 05-007, "Determination of Safety Classification", and WCGS LRA Section 2.1.2.1. The definition provided in LRA Section 2.1.2.1 is consistent with 10 CFR 54.4(a)(1).

- Design Basis Events are considered in the definition of safety-related in Procedure AP 05-007, Section 6.1.4, and AP 23M-001, Section 6.1.1.1.a. which is consistent with 10 CFR 54.4(a)(1).

- USAR Section 3.2 a and b, Procedure AP 05-007, Sections 6.1.4 (1) and (2), and AP 23M-001, Sections 6.1.1.1.a.1 and 2 require integrity of reactor coolant pressure boundary and capability to shutdown the reactor and maintain it in a safe shutdown condition consistent with 10 CFR 54.4(a)(1)(i) and (ii).

- USAR 3.2 c, Procedure AP 05-007, Section 6.1.4 (3), and AP 23M-001, Section 6.1.1.1.a.3 definitions refer to capability to prevent or mitigate accidents that could result in potential offsite exposure comparable to the guidelines in 10 CFR 100 which is consistent with the definition in 10 CFR 54.4(a)(1)(iii). WCGS has not revised the current accident source term in accordance with 10 CFR 50.67 and therefore the reference to 10 CFR 50.67(b)(1) as stated in 10 CFR 54.4(a)(1)(iii) is not applicable to WCGS. The reference to 10 CFR 50.34(a)(1) as stated in 10 CFR 54.4(a)(1)(iii) is intended for applicants for a construction permit, a design certification or combined license pursuant to 10 CFR 52.

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Site specific definitions for safety-related in the USAR and referenced plant programs discussed above are consistent with the definition of safety-related provided in 10 CFR 54.4(a)(1) as referenced in LRA Section 2.1.2.1.

RAI 2.1-2

NRC Regulatory Guide (RG) 1.188, "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses," Revision 1, dated September 2005, provides endorsement on the use of NEI 95-10, "Industry Guidelines for Implementing the Requirements of 10 CFR Part 54 - The License Renewal Rule," Revision 6, dated June 2005. RG 1.188 indicates that NEI 95 -10, Revision 6, provides methods that the staff considers acceptable for complying with the requirements of 10 CFR Part 54 for preparing an LRA.

NEI 95-10, Appendix F, states in part, that nonsafety-related SSCs that are not directly connected to safety-related SSCs, or that are connected downstream of the first equivalent anchor, may be within the scope of license renewal if their failure could prevent the performance of the system safety function for which the safety-related SSC is required. NEI 95-10, Appendix F, describes two options for determining which nonsafety-related SSCs may be within the scope of license renewal. The applicant's methodology for scoping of nonsafety-related components affecting safety-related components is briefly described in LRA Section 2.1.2.2.
The staff requests that the applicant provide the following information related to its evaluation of the 10 CFR 54.4(a)(2) criteria:

(1) Explain which option (mitigative or preventive) was used for nonsafety-related SSCs not directly connected to safety-related SSCs. In addition, describe the process for scoping portions of nonsafety-related systems in rooms or building, level, or areas (BLA) that contain safety-related components.

(2) Define a "room" or BLA as used to determine the location of safety-related equipment. In addition, explain how portions of nonsafety-related systems were scoped for spatial interaction.

(3) Discuss how interactions between adjacent rooms and/or BLAs were evaluated for the purposes of 10 CFR 54.4(a)(2). For example, describe how the effects of a pipe break in a room that may not contain a safety-related component were evaluated for interaction with an adjacent room that may contain a safety-related component.

(4) During the audit, the applicant indicated that portions of piping systems containing an insignificant amount of liquid that would not typically be replenished, such as small isolated drain lines, were not considered to be fluid filled, and as such, were not included within the scope of 10 CFR 54.4(a)(2). Provide the technical justification and extent of condition for the exclusion of such portions of systems from the scope of license renewal.

(5) Similarly, roof drain piping was also considered not to be filled with fluid. However, the applicant has identified that some roof drain piping passes through portions of the auxiliary, control, and diesel generator buildings where safety-related equipment may be

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located. During the audit, the applicant stated that the design and installation of roof drain piping precludes spatial interaction concerns. Provide the technical justification and extent of condition for the exclusion of the roof drain piping that passes through the portions of the above buildings where safety-related equipment is located.

RAI 2.1-2 Response

(1) The NRC guidance for performing the scoping evaluation to satisfy the requirements of Criterion (a)(2) provides a choice of two options, a mitigative option and a preventive option. With the mitigative option, the applicant may demonstrate that plant mitigative features (e.g., pipe whip restraints, jet impingement shields, spray and drip shields, seismic supports, flood barriers) are provided which protect safety-related SSCs from failures of non-safety related piping. The preventive option requires the applicant to include non-safety related piping segments in safety-related areas within the scope of license renewal. The applicant may determine that, to ensure adequate protection of safety-related SSCs, a combination of mitigative features and non-safety related SSCs must be brought within the scope of license renewal. The preventive approach has been utilized for WCGS. The approach utilized conforms to the guidance of NEI 95-10, Rev. 6, Appendix F, as endorsed by Regulatory Guide 1.188, Revision 1.

All fluid-filled non-safety related components in a room or BLA are considered to be within the scope of license renewal for criterion (a)(2) spatial interaction considerations if the room or BLA contains any criteria (a)(1) components. Rooms or BLAs containing fluid-filled non-safety related components (NSR) were excluded from consideration only if there were determined to be documented fire zone barriers such that the fluid-filled non-safety related components were isolated from any safety related components. As a result, any potential room to room communication issues were accounted for.

(2) Equipment location information for WCGS is provided at either the Room or BLA number level.

A Room is a location as shown on the plant drawings with a four digit number identifier. The first digit identifies the specific building, the second the elevation (Level), with the last two digits denoting a sequential number specific to that room. A room may be enclosed and isolated from other locations to the extent that it comprises its own fire zone, or it may be a largely open area with access to other rooms, or any variation in between. These differences in room configuration have been considered as they relate to spatial interactions for license renewal scoping.

A BLA number is a three digit code representing the Building, Level, and Area for a plant location. It differs from the Room number in that the Area could comprise more than one Room.

Each location in the major plant structures can be described with both a Room and BLA number, but the plant equipment location information for a particular component might only be described using one of the methods.

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All fluid-filled non-safety related (NSR) components in a room or BLA are considered to be within the scope of license renewal for criterion (a)(2) spatial interaction considerations if the room or BLA contains any criteria (a)(1) components. Rooms or BLAs containing fluid-filled NSR components were excluded from consideration only if there were determined to be documented fire zone barriers such that the fluid-filled non-safety related components are isolated from any safety-related components. As a result, any potential room to room communication issue has been accounted for.

(3) Plant locations excluded from consideration for spatial interaction by the Criterion (a)(2) License Renewal Position Paper (TR-6) were evaluated for the potential for communication with other rooms that may contain criterion (a)(1) components. Between the Auxiliary, Control, and Fuel Buildings less than approximately two dozen locations were excluded. Of these locations, the majority of locations can be justified with regard to communication because:
•The excluded locations were isolated from any safety-related components by Fire Zone boundaries, or
•The liquid-filled non-safety related components were placed in scope for spatial interaction anyway.

For the remaining several locations, rather than developing a further justification for exclusion, the included non-safety-related liquid filled components will be placed in scope for spatial interaction.

(4) The guidance for exclusion of portions of systems with "insignificant amounts of liquid that would not be replenished," such as small isolated drains, from consideration of spatial interactions, was intended to prevent scoping of portions of systems that either might not actually be liquid-filled or that would not contain sufficient liquid to cause aging of adjacent safety-related items.

This exclusion was not intended for, and was not used, to exclude equipment that was abandoned in place. Neither was this exclusion intended for, nor was it used for, excluding an entire system from scope.

The intention was to allow leaving small sections of drain piping between the isolation valve and a pipe cap out of scope. In any event, many of these sections were placed in scope for other reasons, such as for criterion (a)(2) structural integrity attached.

For the purposes of this evaluation, portions of piping systems containing an insignificant amount of liquid that would not typically be replenished, such as the portion of small isolated drain lines between a shut valve and a cap, were not considered to be "fluid-filled". This was justified because the insignificant amount of liquid contained in these configurations would not be enough to cause aging of mechanical or structural components, and electrical components are installed in metal enclosures with the cable entry into the electrical equipment sealed or installed within conduit that would be unaffected by any atmospheric pressure leakage from these small isolated segments.

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(5) Roof drains passing through rooms or areas containing safety-related equipment will be added to the scope of license renewal.

RAI 2.1-3

During the audit, the applicant stated that it applied the same justification provided in NEI 95-10, Appendix F, Section 5.2.2.3 to exclude the insulation section from the scope of 10 CFR 54.4(a)(2) due to the physical impact hazard. The insulation is supported by insulation supports that are designed to withstand a seismic event for piping and equipment that are seismic designed, or that are classified as seismic II/I. However, the applicant did not indicate whether the insulation supports are within the scope of license renewal. As stated in NEI 95-10, Appendix F, piping supports for seismic II/I piping need to be intact in order to prevent physical impacts on safety-related equipment during a seismic event and as a result must be included within the scope of license renewal.

The staff requests that the applicant explain how the insulation supports designed to withstand a seismic event and that are located in areas containing safety-related equipment were reviewed for inclusion within the scope of license renewal.

RAI 2.1-3 Response

Insulation supports designed to withstand a seismic event and that are located in areas containing safety related equipment within the scope of license renewal will be added to the scope of license renewal and evaluated as non-ASME component supports in accordance with NUREG-1801 Section III.B2.

RAI 3.0.4-1

The staff reviewed the applicant's aging management programs (AMPs) as described in LRA Sections A and B. In addition, the staff reviewed each individual AMP basis document to ensure consistency in the use of the quality assurance attributes for each program. The purpose of this review was to assure that the aging management activities were consistent with the staff's guidance described in the Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants (SRP-LR), Section A.2, "Quality Assurance for Aging Management Programs (Branch Technical Position IQMB-1)."

Based on its evaluation of the descriptions and applicability of the plant-specific AMPs and their associated quality attributes provided in LRA Section B.1.3, the staff finds that the quality assurance attributes are generally consistent with the NRC position regarding quality assurance for aging management. However, the applicant has not sufficiently described the use of the quality assurance program and its associated attributes (corrective action, confirmation process, and administrative controls) in LRA Section A. In addition, AMPs discussed in LRA Sections B.2.1.1 and B.2.1.3 address exceptions taken to the corrective actions program element. However, there is no indication or description of the use of an alternative method to the WCGS 10 CFR Part 50, Appendix B, quality assurance program being applied to the area of corrective action.

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The staff requests that the applicant provide the following information to address these issues:

(1) A supplement to the description in LRA Section A.1 to clearly indicate the application of the WCGS 10 CFR Part 50, Appendix B, quality assurance program, or an alternative, for the corrective action, confirmation process, and administrative control attributes in each program, applicable to nonsafety-related and safety-related structures and components (SCs) during the period of extended operation. If any alternative approaches are identified, provide a detailed description such that the staff can determine if the quality attributes for the AMPs are consistent with the review acceptance criteria contained in SRP-LR, Section A.2

(2) As described in LRA Section B, for each AMP that take exceptions in the area of corrective action, confirmation process, and administrative controls, indicate whether the exceptions include an alternative to the application of the WCGS 10 CFR Part 50, Appendix B, quality assurance program as described in LRA Section B.1.3. If alternative approaches are identified, provide a detailed description such that the staff can determine if the quality attributes for the AMPs are consistent with the review acceptance criteria contained in SRP-LR, Section A.2.

RAI 3.0.4-1 Response

(1) LRA Section A1 will be revised to indicate the application of the WCNOC Quality Assurance Program to safety related and non-safety related SSCs during the period of extended operation.

Section A1 will be revised to include a new introductory paragraph, as follows:

A1 Summary Descriptions of Aging Management Programs
The integrated plant assessment and evaluation of time-limited aging analyses (TLAA) identified existing and new aging management programs necessary to provide reasonable assurance that components within the scope of License Renewal will continue to perform their intended functions consistent with the current licensing basis (CLB) for the period of extended operation. Sections A1 and A2 describe the programs and their implementation activities.

Three elements common to all aging management programs discussed in Sections A1 and A2 are corrective actions, confirmation process, and administrative controls. These elements are included in the WCNOC Quality Assurance (QA) Program, which implements the requirements of 10 CFR 50, Appendix B and are applicable to the safety-related and non-safety related systems, structures and components that are subject to aging management review activities.

(2) Aging Management Programs discussed in LRA Sections B.2.1.1 and B.2.1.3 address exceptions taken to the corrective actions program element (Element 7) of NUREG 1801, Sections XI.M1 and XI.M3. Both of these program exceptions are general exceptions to elements 1, 3, 4, 5, 6 and 7 due to the fact that the WCGS ASME Section XI ISI Program uses the ASME Code, 1998 Edition through the 2000 addenda. NUREG 1801, Sections

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XI.M1 and XI.M3 are based on the ASME Code, 2001 edition through 2002 and 2003 addenda. Corrective actions of the WCNOC Quality Assurance Plan apply to activities discussed in LRA Sections B.2.1.1 and B.2.1.3.

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RAI 2.3.2.2-1
RAI 2.3.2.2-2
RAI 2.3.2.2-3
RAI 2.3.2.3-1
RAI 2.3.2.4-1
RAI 2.3.2.4-2
RAI 2.3.2.7-1
RAI 2.3.2.7-2
RAI 2.3.2.7-3
RAI 2.3.2.8-1
RAI 2.3.2.8-2
RAI 2.3.2.9-1
RAI 2.3.2.9-2
RAI 2.3.2.9-3
RAI 2.3.2.9-4
RAI 2.3.3.8-1
RAI 2.3.3.9-1
RAI 2.3.3.10-1
RAI 2.3.3.11-1
RAI 2.3.3.12-1
RAI 2.3.3.13-1
RAI 2.3.3.20-1

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Containment Spray System

RAI 2.3.2.2-1

LRA Table 2.3.2-2 does not contain all the components highlighted in LRA drawing LR-WCGS-EN-M-12EN01 as components within the scope of license renewal. For example, LRA Table 2.3.2-2 lists closure bolting, piping, pump, tubing, valve, vortex breaker, among others; however, it does not list pump casings nor valve bodies. The staff requests that the applicant clarify this inconsistency. If these components are not within the scope of license renewal, the staff requests that the applicant justify their exclusion.

RAI 2.3.2.2-1 Response

The component types that are subject to aging management review and are highlighted in LRA drawing LR-WCGS-EN-M-12EN01 are included in the component types listed in LRA Table 2.3.2-2. LRA Section 2.1.4.1 states that the active/passive component determinations are based on the guidance provided in NEI-95-10, Appendix B. NEI-95-10, Appendix B, clarifies that for a pump "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the pump casing. For a valve "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the valve body.

In summary, pump casings and valve bodies that are subject to aging management review have been included in scope as component types of pump and valve, respectively, in LRA Table 2.3.2-2.

RAI 2.3.2.2-2

Updated Safety Analysis Report (USAR) Section 6.2.2.1.2.2 describes the mechanical components in the containment recirculation sumps. It states that a "baffle arrangement of grating, coarse screening and fine screening that completely surrounds the sumps to prevent floating debris and high density particles from entering." However, these baffle arrangements and their intended function(s) are not listed in LRA Table 2.3.2-2. The staff requests that the applicant justify the exclusion of these components from the scope of license renewal.

RAI 2.3.2.2-2 Response

The associated components are addressed in LRA Section 2.3.2.11, Residual Heat Removal (RHR) System. The baffle arrangements of screens for the containment recirculation sumps are included in scope and are listed in LRA Table 2.3.2-11 as Component Type of "Screen" with Intended Function of "Filter". Each train of RHR and containment spray uses the same containment recirculation sump. Wolf Creek drawings and equipment list assign the screens to the RHR system.

As indicated in license renewal drawing LR-WCGS-EN-M-12EN01, the containment recirculation sumps with the screens are included in license renewal drawing LR-WCGS-EJ-M-12EJ01.

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RAI 2.3.2.2-3

USAR Section 6.2.5.2.2.2 states that the containment spray system is one element of a complement of factors and systems that ensure uniform mixing of hydrogen within the containment atmosphere following a loss of coolant accident. LRA Section 2.3.2.2 does not mention this function. The staff requests that the applicant clarify this inconsistency.

RAI 2.3.2.2-3 Response

A new second sentence will be added to System Function Description in LRA Section 2.3.2.2 (Containment Spray System) as follows: The containment spray system cools containment air and causes it to drop to lower elevations causing some hydrogen mixing to occur.

Containment Integrated Leak Rate Test System

RAI 2.3.2.3-1

LRA Table 2.3.2-3 does not contain all the components highlighted in LRA drawing LR-WCGS-GP-M-12GP01 as components within the scope of license renewal. For example, LRA Table 2.3.2-3 lists closure bolting, piping, and valve; however, it does not list valve bodies. The staff requests that the applicant clarify this inconsistency. If these components are not within the scope of license renewal, the staff requests that the applicant justify their exclusion.

RAI 2.3.2.3-1 Response

The component types that are subject to aging management review and are highlighted in license renewal drawing LR-WCGS-GP-M-12GP01 are included in the component types listed in LRA Table 2.3.2-3. LRA Section 2.1.4.1 states that the active/passive component determinations are based on the guidance provided in NEI 95-10, Appendix B. NEI 95-10, Appendix B, clarifies that for a valve "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the valve body.

In summary, valve bodies that are subject to aging management review have been included in scope as component type of valve in LRA Table 2.3.2-3.

Decontamination System

RAI 2.3.2.4-1

LRA Table 2.3.2-4 does not contain all the components highlighted in LRA drawing LR-WCGS-HD-M-12HD01 as components within the scope of license renewal. For example, LRA Table 2.3.2-4 lists closure bolting, piping, and valve; however, it does not list valve bodies. The staff requests that the applicant clarify this inconsistency. If these components are not within the scope of license renewal, the staff requests that the applicant justify its exclusion.

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RAI 2.3.2.4-1 Response

The component types that are subject to aging management review and are highlighted in license renewal drawing LR-WCGS-HD-M-12HD01 are included in the component types listed in LRA Table 2.3.2-4. LRA Section 2.1.4.1 states that the active/passive component determinations are based on the guidance provided in NEI 95-10, Appendix B. NEI 95-10, Appendix B, clarifies that for a valve "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the valve body.

In summary, valve bodies that are subject to aging management review have been included in scope as component type of valve in LRA Table 2.3.2-4.

RAI 2.3.2.4-2

LRA drawing LR-WCGS-HD-M-12HD01 shows 1-inch test connections (attached to 016-HBD-2 and 017-HBD-2) not highlighted in green. This would indicate that these 1-inch test connections are not within the scope of license renewal and not subject to an aging management review (AMR). The two 2-inch pipes shown in the drawing have an intended function of "structural integrity (attached)." The staff request that the applicant clarify whether the 1-inch test connections have the same intended function as the 2-inch pipes. If yes, the staff requests that the applicant justify their exclusion from the scope of license renewal.

RAI 2.3.2.4-2 Response

The red highlighted 2-inch piping on the boundary drawing is in-scope for structural integrity attached (SIA). The SIA intended function ends at a seismic anchor on the 2-inch piping. The 1-inch test connection piping attaches to the 2-inch SIA piping and is unsupported independent of the SIA piping. Therefore the 1-inch test connection piping does not perform an SIA intended function but only adds load for the 2-inch SIA piping. This piping configuration has been analyzed in the 2-inch SIA piping support calculation.

Containment Purge HVAC System

RAI 2.3.2.7-1

LRA Table 2.3.2-7 does not contain all the components highlighted in LRA drawing LR-WCGS-GT-M-12GT01 as components within the scope of license renewal. For example, LRA Table 2.3.2-7 lists closure bolting, damper, pump, and valve; however, it does not list damper housings, pump casing, nor valve bodies. The staff requests that the applicant clarify this inconsistency. If these components are not within the scope of license renewal, the staff requests that the applicant justify their exclusion.

RAI 2.3.2.7-1 Response

The component types that are subject to aging management review and are highlighted in license renewal drawing LR-WCGS-GT-M-12GT01 are included in the component types

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listed in LRA Table 2.3.2-7. LRA Section 2.1.4.1 states that the active/passive component determinations are based on the guidance provided in NEI 95-10, Appendix B. NEI 95-10, Appendix B, clarifies that for a pump "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the pump casing. For a valve "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the valve body. Dampers are included in NEI 95-10, Appendix B, as a valve "category" and the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the damper housing.

In summary, pump casings, valve bodies and damper housings that are subject to aging management review have been included in scope as component types of pump, valve and damper, respectively, in LRA Table 2.3.2-7.

RAI 2.3.2.7-2

LRA drawing LR-WCGS-GT-M-12GT01 does not highlight the safety related / non-safety related interfaces (i.e., green to red) as within the scope of license renewal. However, LRA Table 2.3.2-7 shows "structural integrity (attached)" as an intended function for piping in the system. The staff requests that the applicant explain why this interface is not highlighted in the drawing. If this interface is not within the scope of license renewal, the staff requests that the applicant justify its exclusion.

RAI 2.3.2.7-2 Response

There are seven locations on Boundary Drawing LR-WCGS-GT-M-12GT01 at D-7, F-2, F-6, F-7, and G-6 that depict green HVAC ducting attached to non-highlighted HVAC ducting. This is correct as shown. The green HVAC ducting is safety-related, seismic category 1, and is self supporting under accident conditions. The attached non-safety related (non-highlighted) HVAC ducting does not provide additional support for the safety-related ducting since sheet metal ducting does not have the strength capability and therefore does not have a structural integrity attached (SIA) intended function.

There are six locations on Boundary Drawing LR-WCGS-GT-M-12GT01 at A-5, A-6, C-4, C-5, C-6, and E-4 that depict green HVAC piping attached to non-highlighted HVAC piping. The attached non-safety related piping should be shown as structural integrity attached (SIA) and highlighted in red. On Boundary Drawing LR-WCGS-GT-M-12GT01 the additional non-safety related piping that should be highlighted in red is piping up to the 5NL boundary, which is the point where non-safety related HVAC ducting begins. Valves V0017, V0018, V0019, V0020, V0021, and V0022 and associated ¾" piping will not be SIA since there are no supports on these sections that contribute to the SIA intended function. Component groups currently exist for these changes; therefore no changes are required to LRA Tables 2.3.2-7 and 3.2.2-7.

RAI 2.3.2.7-3

LRA Table 2.3.2-7 lists "pressure boundary" as an intended function for the component type of tubing. LRA drawing LR-WCGS-GT-M-12GT01 shows a 3/8-inch tubing located at heat

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exchanger No. 14 (at valves V0220 and V0221) which would suggest a "leakage boundary (spatial)" intended function. The staff requests that the applicant clarify this discrepancy.

RAI 2.3.2.7-3 Response

The 3/8-inch tubing and the associated valves V0220 and V0221 (license renewal drawing LR- WCGS-GT-M-12GT01, zone C-3) all have an intended function of "leakage boundary (spatial)". LRA Table 2.3.2-7 and Table 3.2.2-7 will be revised to include the intended function of "leakage boundary (spatial)" for the component type of tubing.

Breathing Air System

RAI 2.3.2.8-1

LRA Table 2.3.2-8 does not contain all the components highlighted in LRA drawing LR-WCGS-KB-M-12KB01 as components within the scope of license renewal. For example, LRA Table 2.3.2-8 lists closure bolting, piping, and valve; however, it does not list valve bodies. The staff requests that the applicant clarify this inconsistency. If these components are not within the scope of license renewal, the staff requests that the applicant justify their exclusion.

RAI 2.3.2.8-1 Response

The component types that are subject to aging management review and are highlighted in license renewal drawing LR-WCGS-KB-M-12KB01 are included in the component types listed in LRA Table 2.3.2-8. LRA Section 2.1.4.1 states that the active/passive component determinations are based on the guidance provided in NEI 95-10, Appendix B. NEI 95-10, Appendix B, clarifies that for a valve "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the valve body.

In summary, valve bodies that are subject to aging management review have been included in scope as component type of valve in LRA Table 2.3.2-8.

RAI 2.3.2.8-2

LRA drawing LR-WCGS-KB-M-12KB01 shows 1-inch test connections 004-HCD-1 and 005-HCD-1 not highlighted, indicating that there are not within the scope of license renewal and not subject to an AMR. Test connection 004-HCD-1 attaches to 002-HCD-2, and test connection 005-HCD-1 attaches to 003-HCD-2. As indicated in LRA Table 2.3.2-8 and by the red highlight shown in the drawing, pipes 002-HCD-2 and 003-HCD-2 have an intended function of "structural integrity (attached)" in accordance with 10 CFR 54.4(a)(2). It seems that these 1-inch test connections have the same intended function. Therefore, the staff requests that the applicant explain why test connections 004-HCD-1 and 005-HCD-1 and their attendant valves are not within the scope of license renewal and subject to an AMR.

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RAI 2.3.2.8-2 Response

The red highlighted 2-inch piping on the boundary drawing is in-scope for structural integrity attached (SIA). The SIA intended function ends at a seismic anchor on the 2-inch piping. The 1-inch test connection piping attaches to the 2-inch SIA piping and is unsupported independent of the SIA piping. Therefore the 1-inch test connection piping does not perform an SIA intended function but only adds load for the 2-inch SIA piping. This piping configuration has been analyzed in the 2-inch SIA piping support calculation.

Hydrogen Control System

RAI 2.3.2.9-1

LRA Table 2.3.3-9 does not contain all the components highlighted in LRA drawing LR-WCGS-GS-M-12GS01 as components within the scope of license renewal. For example, LRA Table 2.3.3-9 lists closure bolting, piping, recombiner, and valve, among others; however, it does not list valve bodies or recombiner housings. The staff requests that the applicant explain this inconsistency. If these components are not within the scope of license renewal, the staff requests that the applicant justify their exclusion.

RAI 2.3.2.9-1 Response

The component types that are subject to aging management review and are highlighted in license renewal drawing LR-WCGS-GS-M-12GS01 are included in the component types listed in LRA Table 2.3.2-9. LRA Section 2.1.4.1 states that the active/passive component determinations are based on the guidance provided in NEI 95-10, Appendix B. NEI 95-10, Appendix B, clarifies that for a valve "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the valve body.

The USAR, Section 6.2.5.2.2.1 indicates that the funtion of the hydrogen recombiners is based on passive natural circulation of the air flow. As per NEI 95-10, Appendix B, (item #66), the portions of the recombiners including the enclosure that have the passive intended function of maintaining natural circulation flow are in scope for aging management review and are listed in LRA Table 2.3.2-9 as component type of "Recombiner" with an intended function of "Direct Flow".

In summary, valve bodies and the portions of the recombiners including the enclosure that are subject to aging management review have been included in scope as listed in LRA Table 2.3.2-9.

RAI 2.3.2.9-2

USAR 6.2.5.2.2.2 states that one of the system functions is to uniformly mix the hydrogen within the containment atmosphere following a loss-of-coolant accident. However, this is not addressed in the system description of LRA Section 2.3.2.9. Furthermore, there is no mention of this uniform mixing of hydrogen function in LRA Section 2.3.3.5, "Containment Cooling System." The staff requests that the applicant clarify these inconsistencies.

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RAI 2.3.2.9-2 Response

As stated in USAR Section 6.2.5.2.2.2 and LRA Section 2.3.2.9 Hydrogen Control System (System Function): The containment design is such that mixing, adequate to prevent formation of hydrogen pockets, is assured without reliance of the hydrogen control system mixing fans.
A new second sentence will be added to System Function Description in LRA Section 2.3.3.5 (Containment Cooling System) as follows: Some hydrogen mixing will occur as the containment air coolers take suction from above the operating floor level and discharge to the lower levels of the containment.

RAI 2.3.2.9-3

LRA Table 2.3.2-9 indicates that portions of the piping subject to an AMR have a "structural integrity (attached)" intended function. The system function described in LRA Section 2.3.2.9 does not indicate that portions of the hydrogen control system are within scope of license renewal in accordance with the 10 CFR 54.4(a)(2) criteria. The staff requests that the applicant clarify this inconsistency.

RAI 2.3.2.9-3 Response

The scoping results of the hydrogen control system will be amended to clarify that portions of the hydrogen control system are in scope as non-safety-related affecting safety-related components based on the criterion of 10 CFR 54.4(a)(2). A statement of "Portions of the hydrogen control system are in scope as non-safety-related affecting safety-related components based on the criterion of 10 CFR 54.4(a)(2)." will be added in the system function section of LRA Section 2.3.2.9.

RAI 2.3.2.9-4

LRA drawing LR-WCGS-GS-M-12GS01 appears to have at least one piping segment that has a "structural integrity (attached)" intended function pursuant to 10 CFR 54.4(a)(2). For example, pipe 026-HB0-6, located downstream of the seismic flag at butterfly valve V021 at coordinate F-4, appears to be a carbon steel pipe with a "structural integrity (attached)" intended function. This would be in agreement with LRA Table 2.3.2.9. However, there are multiple occurrences of what appears to be stainless steel test connections beyond the seismic anchor point identified on the drawing. In most cases it is not obvious whether the test connection is stainless steel pipe or tubing. At coordinate B-3 and B-7, there is stainless steel tubing connected beyond the seismic anchor valves V0109 and V010, which appear to be safety-related to non-safety related interfaces. The staff requests that the applicant clarify whether the component type tubing should also include a "structural integrity (attachment)" intended function. In addition, the staff requests that the applicant clarify similar inconsistencies in LRA Section 2.3.2.9 and its drawing.

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RAI 2.3.2.9-4 Response

Piping segment 026-HB0-6, located downstream of the butterfly valve V021 (license renewal drawing LR-WCGS-GS-M-12GS01, zone F-4), has a intended function of "structural integrity (attached)". LR-WCGS-GS-M-12GS01 should show the correct intended function for 026-HB0-6. LRA Table 2.3.2-9 will not be affected as a result of this change. LRA Table 3.2.2-9 will be revised to include the function of "structural integrity (attached)" for component type of piping.

Piping segment downstream of valve V0041 (zone F-4) has no function of "structural integrity (attached)". Thus the segment is not highlighted.

Most of the test connection piping segment downstream of the isolation valves with intended function of "structural integrity (attached)" are stainless steel pipe with piping class of HCD. Two segments (at coordinate B-3 and B-7, downstream of the valves V0109 and V0108) are stainless steel tubing. LRA Table 2.3.2-9 and Table 3.2.2.-9 will be revised to include the function of "structural integrity (attached)" for component type of tubing.

Auxiliary Building HVAC System

RAI 2.3.3.8-1

LRA Table 2.3.3-8 does not contain all the components highlighted in LRA drawings LR-WCGS-GL-M-12GL01, LR-WCGS-GL-M-12GL02, and LR-WCGS-GL-M-12GL03 as components within the scope of license renewal. For example, LRA Table 2.3.3-8 lists closure bolting, damper, ductwork, fan, and flex connector, among others; however, it does not list damper housings, heating coil housings, pump casing, valve bodies, nor fan housings. The staff requests that the applicant clarify this inconsistency. If these and other applicable components are not within the scope of license renewal, the staff requests that the applicant justify their exclusion.

RAI 2.3.3.8-1 Response

The component types that are subject to aging management review and are highlighted in license renewal drawings LR-WCGS-GL-M-12GL01, LR-WCGS-GL-M-12GL02, and LR-WCGS-GL-M-12GL03 are included in the component types listed in LRA Table 2.3.3-8. LRA Section 2.1.4.1 states that the active/passive component determinations are based on the guidance provided in NEI 95-10, Appendix B. NEI 95-10, Appendix B, clarifies that for a pump "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the pump casing. For a valve "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the valve body. For a fan "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the fan housing. Dampers are included in NEI 95-10, Appendix B, as a valve "category" and the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the damper housing.

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In summary, pump casings, valve bodies, fan housings, and damper housings that are subject to aging management review have been included in scope as component types of pump, valve, fan and damper, respectively, in LRA Table 2.3.3-8.

The heaters of GL system are provided by plant heating system through heat exchangers. They are included in scope and are listed in LRA Table 2.3.3-8 as component types of heat exchanger shell side and heat exchanger tube side. There are no heater housings involved in the GL system components that are subject to aging management review.

Control Building HVAC System

RAI 2.3.3.9-1

LRA Table 2.3.3-9 does not contain all the components highlighted in LRA drawings LR-WCGS-GK-M-12GK01, LR-WCGS-GK-M-12GK02, LR-WCGS-GK-M-12GK03, and LR-WCGS-GK-M-12GK04 as components within the scope of license renewal. For example, LRA Table 2.3.3-9 lists adsorber, closure bolting, compressor, damper, ductwork, fan, flex connector, pump, and valve, among others; however, it does not list housings for filter adsorption units (including its HEPA filters, charcoal adsorbers, and moisture separators), compressor housings, fire dampers, damper housings including fire damper housings, heating coil housings, pump casings, valve bodies, supply and return grills, air intake louvers and associated housings, nor fan housings. The staff requests that the applicant clarify this inconsistency. If these and other applicable components (e.g., sealants, wall sealants, pressure boundary sealants, metal screens to protect against any debris for air intake or air discharge (purge), etc.) are not within the scope of license renewal, the staff requests that the applicant justify their exclusion.

RAI 2.3.3.9-1 Response

The component types that are subject to aging management review and are highlighted in license renewal drawings LR-WCGS-GK-M-12GK01, LR-WCGS-GK-M-12GK02, LR-WCGS-GK-M-12GK03, and LR-WCGS-GK-M-12GK04 are included in the component types listed in LRA Table 2.3.3-9. LRA Section 2.1.4.1 states that the active/passive component determinations are based on the guidance provided in NEI 95-10, Appendix B. NEI 95-10, Appendix B, clarifies that for a pump "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the pump casing. For a valve "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the valve body. For a fan "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the fan housing. Dampers are included in NEI 95-10, Appendix B, as valve "category" and the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the damper housing.

In summary, pump casings, valve bodies, fan housings, and damper housings including fire damper housings that are subject to aging management review have been included in scope as component types of pump, valve, fan and damper, respectively, in LRA Table

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2.3.3-9. The compressor housings are addressed as pump housings and included in scope as component type of compressor in LRA Table 2.3.3-9.

The heaters of GK system are provided by plant heating system through heat exchangers. They are included in scope and are listed in LRA Table 2.3.3-8 as component types of heat exchanger shell side and heat exchanger tube side. There are no heater housings involved in the GK system components that are subject to aging management review.

Fire barrier seals and structural pressure boundary sealant are evaluated in LRA Section 2.4.2 and are included in LRA Table 2.4-2.

The housings for filter adsorber units that are subject to aging management review are listed in LRA Table 2.3.3-9 as component type of adsorber with intended function of pressure boundary.

Air Intake Louvers have been included in scope as generic structural steel and are included in LRA Table 2.4-2. Mechanical boundaries with respect to HVAC end where the duct meets the interior wall. Entry/Exit plenums shown on the drawings are those plenums that penetrate the building walls to the outside. The concrete associated with these plenums is included in scope as a generic concrete component and is also included in included in LRA Table 2.4-2.

Fuel Building HVAC System

RAI 2.3.3.10-1

LRA Table 2.3.3-10 does not contain all the components highlighted in LRA drawings LR-WCGS-GG-M-12GG01, and LR-WCGS-GG-M-12GG02 as components within the scope of license renewal. For example, LRA Table 2.3.3-10 lists adsorber, closure bolting, damper, ductwork, fan, and flex connectors, among others; however, does not list housings for filter adsorber units (including its HEPA filters, charcoal adsorbers, and moisture separators), damper housings, fire dampers and associated housings, heating coil housings, pump casings, valve bodies, nor fan housings. The staff requests that the applicant clarify this inconsistency. If these and other applicable components (e.g., duct sealants, wall sealants, pressure boundary sealants, etc.) are not within the scope of license renewal, the staff requests that the applicant justify their exclusion.

RAI 2.3.3.10-1 Response

The component types that are subject to aging management review and are highlighted in license renewal drawings LR-WCGS-GG-M-12GG01, and LR-WCGS-GG-M-12GG02 are included in the component types listed in LRA Table 2.3.3-10. LRA Section 2.1.4.1 states that the active/passive component determinations are based on the guidance provided in NEI 95-10, Appendix B. NEI 95-10, Appendix B, clarifies that for a pump "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the pump casing. For a valve "category", the structure, component, or commodity grouping

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that meets 10CFR54.21(a)(1)(i) is the valve body. For a fan "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the fan housing. Dampers are included in NEI 95-10, Appendix B, as valve "category" and the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the damper housing.

In summary, pump casings, valve bodies, fan housings, and damper housings including fire damper housings that are subject to aging management review have been included in scope as component types of pump, valve, fan and damper, respectively, in LRA Table 2.3.3-10.

Heaters of GG system are mounted on the ductwork or provided by the plant heating system through in-line heat exchangers. The portion of the duct-mounted heaters that has an intended function of maintaining ductwork pressure boundary are included within the scope of license renewal and are listed in LRA Table 2.3.3-10 as a component type of heater. The portion of the in-line heaters that has an intended function of maintaining ductwork pressure boundary are included within the scope of license renewal and are listed in LRA Table 2.3.3-10 as component types of heat exchanger shell side and heat exchanger tube side.

Fire barrier seals and structural pressure boundary sealants are evaluated in LRA Section 2.4.12 and are included in LRA Table 2.4-12. Miscellaneous caulking and sealants in the fuel building are also included in LRA Table 2.4-12.

The housings for filter adsorber units that are subject to aging management review are listed in LRA Table 2.3.3-10 as component type of adsorber with intended function of pressure boundary.

Air Intake Louvers have been included in scope as generic structural steel and are included in LRA Table 2.4-12. Mechanical boundaries with respect to HVAC end where the duct meets the interior wall. Entry/Exit plenums shown on the drawings are those plenums that penetrate the building walls to the outside. The concrete associated with these plenums is included in scope as a generic concrete component and is also included in included in LRA Table 2.4-12.

Essential Service Water Pumphouse Building HVAC System

RAI 2.3.3.11-1

LRA Table 2.3.3-11 does not contain all the components highlighted on LRA drawing LR-WCGS-GD-M-K2GD01 as components within the scope of license renewal. For example, LRA Table 2.3.3-11 lists closure bolting, damper, ductwork, and fan, among others; however, it does not list damper housings, intake and exhaust louvers with their associated housings and plenums nor fan housings. The staff requests that the applicant clarify this inconsistency. The staff requests that the applicant clarify this inconsistency. If these and other applicable components are not within the scope of license renewal, the staff requests that the applicant justify their exclusion.

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RAI 2.3.3.11-1 Response

The component types that are subject to aging management review and are highlighted in license renewal drawing LR-WCGS-GD-M-K2GD01 are included in the component types listed in LRA Table 2.3.3-11. LRA Section 2.1.4.1 states that the active/passive component determinations are based on the guidance provided in NEI 95-10, Appendix B. NEI 95-10, Appendix B, clarifies that for a fan "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the fan housing. Dampers are included in NEI 95-10, Appendix B, as valve "category" and the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the damper housing.

In summary, fan housings and damper housings including fire damper housings that are subject to aging management review have been included in scope as component types of fan and damper, respectively, in LRA Table 2.3.3-11.

Air Intake Louvers have been included in scope as generic structural steel and are included in LRA Table 2.4-13. Mechanical boundaries with respect to HVAC end where the duct meets the interior wall. Entry/Exit plenums shown on the drawings are those plenums that penetrate the building walls to the outside. The concrete associated with these plenums is included in scope as a generic concrete component and is also included in LRA Table 2.4-13.

Miscellaneous Buildings HVAC System

RAI 2.3.3.12-1

LRA Table 2.3.3-12 does not contain all the components highlighted on LRA drawing LR-WCGS-GF-M-12GF01 as components within the scope of license renewal. For example, LRA Table 2.3.3-12 lists closure bolting, damper, ductwork, fan, and flex connector, among others; however, it does not list damper housings, heating coil housings, pump casings, valve bodies, nor fan housings. The staff requests that the applicant clarify this inconsistency. If these and other applicable components are not within the scope of license renewal, the staff requests that the applicant justify their exclusion.

RAI 2.3.3.12-1 Response

The component types that are subject to aging management review and are highlighted in license renewal drawing LR-WCGS-GF-M-12GF01 are included in the component types listed in LRA Table 2.3.3-12. LRA Section 2.1.4.1 states that the active/passive component determinations are based on the guidance provided in NEI 95-10, Appendix B. NEI 95-10, Appendix B, clarifies that for a pump "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the pump casing. For a valve "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the valve body. For a fan "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the fan housing. Dampers are

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Dated April 18, 2007**

included in NEI 95-10, Appendix B, as a valve "category" and the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the damper housing.

In summary, pump casings, valve bodies, fan housings, and damper housings including fire damper housings that are subject to aging management review have been included in scope as component types of pump, valve, fan and damper, respectively, in LRA Table 2.3.3-12.

The heaters of GF system are provided by plant heating system through heat exchangers. They are included in scope and are listed in LRA Table 2.3.3-12 as component types of heat exchanger shell side and heat exchanger tube side. There are no heater housings involved in the GF system components that are subject to aging management review.

Diesel Generator Building HVAC System

RAI 2.3.3.13-1

LRA Table 2.3.3-13 does not contain all the components highlighted on LRA drawing LR-WCGS-GM-M-12GM01 as components within the scope of license renewal. For example, LRA Table 2.3.3-13 lists closure bolting, damper, ductwork, fan, and flex connector, among others; however, it does not list damper housings, valves and valve bodies, intake and exhaust louvers and associated housings and plenums nor fan housings. The staff requests that the applicant clarify this inconsistency. If these and other applicable components are not within the scope of license renewal, the staff requests that the applicant justify their exclusion.

RAI 2.3.3.13-1 Response

The component types that are subject to aging management review and are highlighted in license renewal drawing LR-WCGS-GM-M-12GM01 are included in the component types listed in LRA Table 2.3.3-13. LRA Section 2.1.4.1 states that the active/passive component determinations are based on the guidance provided in NEI 95-10, Appendix B. NEI 95-10, Appendix B, clarifies that for a fan "category", the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the fan housing. Dampers are included in NEI 95-10, Appendix B, as valve "category" and the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the damper housing.

In summary, fan housings and damper housings that are subject to aging management review have been included in scope as component types of fan and damper, respectively, in LRA Table 2.3.3-13.

Air Intake Louvers have been included in scope as generic structural steel and are included in LRA Table 2.4-3. Mechanical boundaries with respect to HVAC end where the duct meets the interior wall. Entry/Exit plenums shown on the drawings are those plenums that penetrate the building walls to the outside. The concrete associated with these plenums is included in scope as a generic concrete component and is also included in included in LRA Table 2.4-3.

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There are no valves involved in GM system.

Turbine Building HVAC System

RAI 2.3.3.20-1

LRA Tables 2.3.3-20 and 3.3.2-20 does not contain all the components highlighted on LRA drawings LR-WCGS-GE-M-12GE01 and LR-WCGS-GE-M-12GE02 as components within the scope of license renewal. For example, LRA Table 2.3.3-20 lists closure bolting, damper, ductwork, and flex connector; however, it does not list damper housings, fire dampers nor fire damper housings. The staff requests that the applicant clarify this inconsistency. If these and other applicable components are not within the scope of license renewal, the staff requests that the applicant justify their exclusion.

RAI 2.3.3.20-1 Response

The component types that are subject to aging management review and are highlighted in license renewal drawings LR-WCGS-GE-M-12GE01 and LR-WCGS-GE-M-12GE02 are included in the component types listed in LRA Table 2.3.3-20. LRA Section 2.1.4.1 states that the active/passive component determinations are based on the guidance provided in NEI 95-10, Appendix B. Dampers are included in NEI 95-10, Appendix B, as valve "category" and the structure, component, or commodity grouping that meets 10CFR54.21(a)(1)(i) is the damper housing.

In summary, damper housings including fire damper housings that are subject to aging management review have been included in scope as component types of damper in LRA Table 2.3.3-20.

List of Commitments

LIST OF COMMITMENTS

The following table identifies those actions committed to by Wolf Creek Nuclear Operating Corporation in this document. Any other statements in this letter are provided for information purposes and are not considered regulatory commitments. Please direct questions regarding these commitments to Mr. Kevin Moles, Manager Regulatory Affairs at Wolf Creek Generating Station, (620) 364-4126.

REGULATORY COMMITMENT	DUE DATE
License Renewal Application changes discussed in this document will be submitted in an amendment to the application.	**07/20/2007**

Enclosure 1

Drawings

M-12KD01
M-12KD02
M-13GA01
M-13GA03
M-13GA17
M-13GA18
M-03HF01
M-03HF02
M-03HF10

VALVE INFORMATION TABLE

VALVE NO.	VENDOR PRINT NO.	P.O. ITEM NO.
V-035	M-234-012	1.08
V-071	M-444-0009	8.19
V-135	M-234-009	1.05
V-170	M-234-008	1.05
GK-V-013	M-244-0010	4.04
GK-V002	J-714	—
GL-V-104	M-234-008	1.05
GL-V-096	M-234-012	1.08
V-150	M-234-007	1.03
GT-V-016	M-234-029	6.83
GT-V-010	M-234-038	8.92
GT-V-009	M-234-0101	1.11
GT-V-031	M-234-029	6.83

GENERAL NOTES:

1. FOR SCHEDULES AND MATERIAL OF PIPE, VALVES AND FITTINGS, SEE SPECIFICATION M5-2.
2. SEE DWG M-12GA01 & 02 FOR APPLICABLE PIPING AND INSTRUMENT DIAGRAM.
3. FOR P&ID LEGEND SEE DWG. M-12GI01 THRU M-12GI04.
4. DWG. M-13GA01 THRU M-13GA20 PROVIDE ALL PIPING ISOMETRICS FOR THE PLANT HEATING SYSTEM.
5. WORK THIS DRAWING WITH M-13GA05, M-13GA03, M-13GA05 AND M-17T137.
6. FOR INSULATION THICKNESS SEE SPECIFICATION M5-1.
7. FOR LINE DESIGNATION SHEETS SEE SPECIFICATION M5-1.
8. FOR BRANCH CONNECTION DETAILS SEE SPECIFICATION M5-4.
9. FOR WELD END PREPARATION DATA SEE SPECIFICATION M5-6
10. FOR END TRANSITION DETAILS SEE SPECIFICATION M5-7.
11. PIPE SPOOL NUMBERS ARE IDENTIFIED WITHIN A BOX ADJACENT TO THE APPROPRIATE PIPE. THE NUMBERING SEQUENCE AND IDENTIFICATION ARE IN ACCORDANCE WITH SPECIFICATION M5-5.
12. FOR SOCKET WELD AND THREADED WELDING HALF - COUPLINGS SEE SPECIFICATION M5-3.
13. FOR VALVE INDEX SEE QUANTITY TRACKING SYSTEM VALVE LOG.
14. FOR EQUIPMENT SEE SMUPPS EQUIPMENT LIST.
15. UNLESS OTHERWISE NOTED, NO ALLOWANCE HAS BEEN MADE FOR WELDED JOINTS OR GASKETS.
16. WHERE FLAT-FACED FLANGES OCCUR ON EQUIPMENT CONNECTIONS, MATING FLANGES ARE ALSO TO BE FLAT-FACED.
17. WHERE FIELD WELD LOCATIONS ARE NOT DIMENSIONED USE RANDOM 20 FEET LENGTHS TO MAINTAIN OVERALL DIMENSIONS.
18. SHOP FABRICATION ON ANSI B31.1 PIPING SHALL BE IN ACCORDANCE WITH SPECIFICATION M-202B. FIELD FABRICATION AND INSTALLATION SHALL BE IN ACCORDANCE WITH SPECIFICATION M-205.
19. ALL BENDS SHOWN FOR 2" PIPING AND BELOW SHALL BE FIVE (5) TIMES THE NOMINAL PIPE DIAMETER IN ACCORDANCE WITH SPECIFICATION M-205.

WOLF CREEK NUCLEAR OPERATING CORPORATION

ELECTRONIC APPROVAL

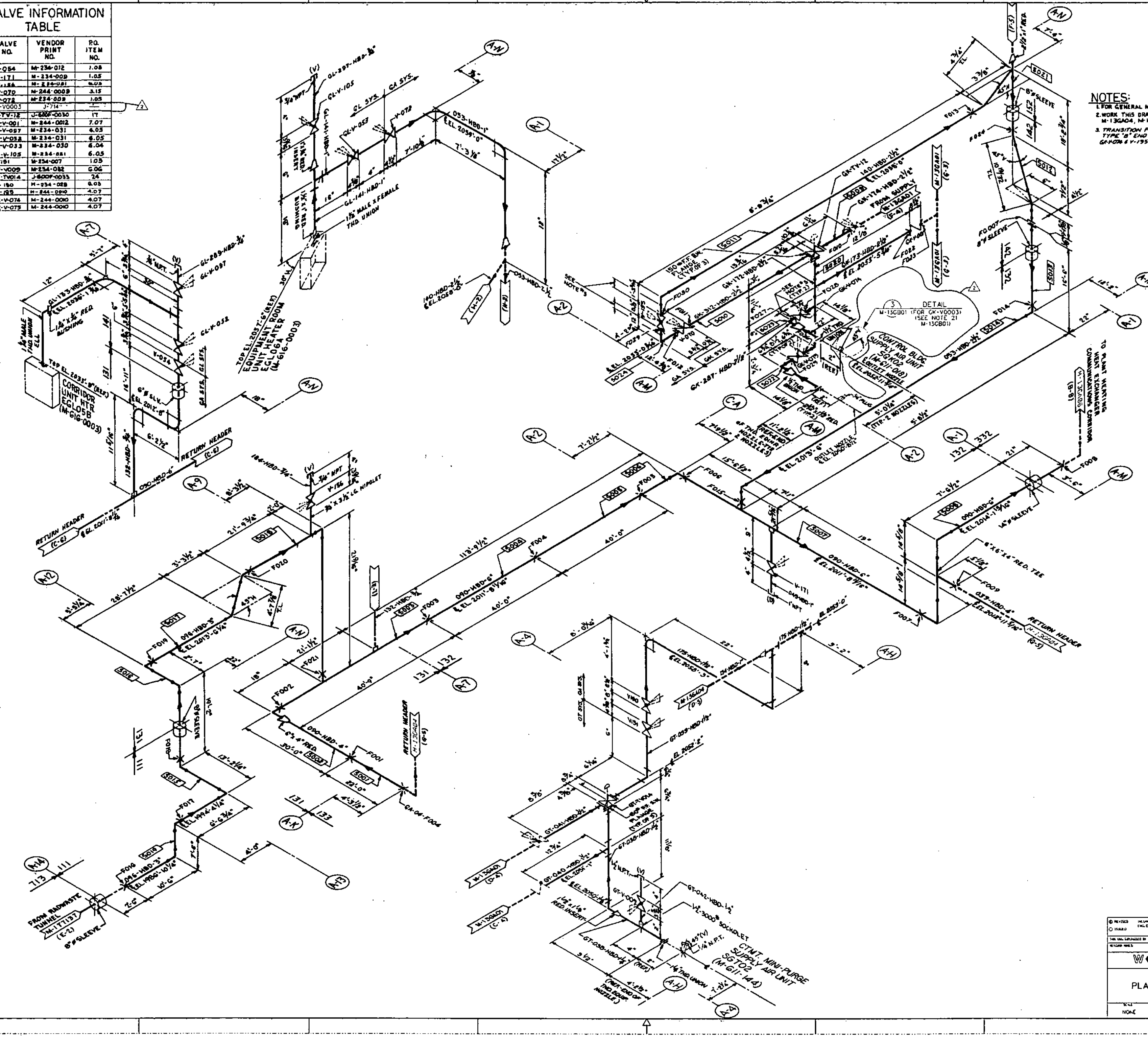
PIPING ISOMETRIC
PLANT HEATING SYS. SUPPLY
AUXILIARY BUILDING

SCALE	DRAWING NO.	SHEET
NONE	M-13GA01	03

Released by Document Services Release Date: 09/22/05

VALVE INFORMATION TABLE

VALVE NO.	VENDOR PRINT NO.	P.O. ITEM NO.
V-054	M-234-012	1.08
V-171	M-234-009	1.05
V-156	M-234-[illegible]	[illegible]
V-070	M-244-0009	3.15
V-072	M-234-009	1.05
GK-V0003	J-714	—
GK-TV-12	J-600F-0030	17
GK-V-001	M-244-0012	7.07
GL-V-097	M-234-031	6.05
GL-V-052	M-234-031	6.05
GL-V-033	M-234-030	6.04
GL-V-105	M-234-031	6.05
V181	M-234-007	1.05
GT-V009	M-234-032	6.06
GT-TV014	J-600F-0033	24
V-190	M-234-028	9.05
V-195	M-244-0010	4.07
GK-V-074	M-244-0010	4.07
GK-V-075	M-244-0010	4.07



NOTES:

1. FOR GENERAL NOTES SEE DWG. NO. M-13GA01.
2. WORK THIS DRAWING WITH DWG. NOS. M-13GA01, M-13GA04, M-13GA06, & M-1T7137.
3. TRANSITION PIECES TO BE SCH. 80 PIPE WITH TYPE "B" END PREP. MATCHING VALVES GK-V-075, GK-V-074 & V-195 IN ACCORDANCE WITH MS-6.

WOLF CREEK NUCLEAR OPERATING CORPORATION

ELECTRONIC APPROVAL

PIPING ISOMETRIC
PLANT HEATING SYSTEM RETURN
AUXILIARY BUILDING

SCALE: NONE

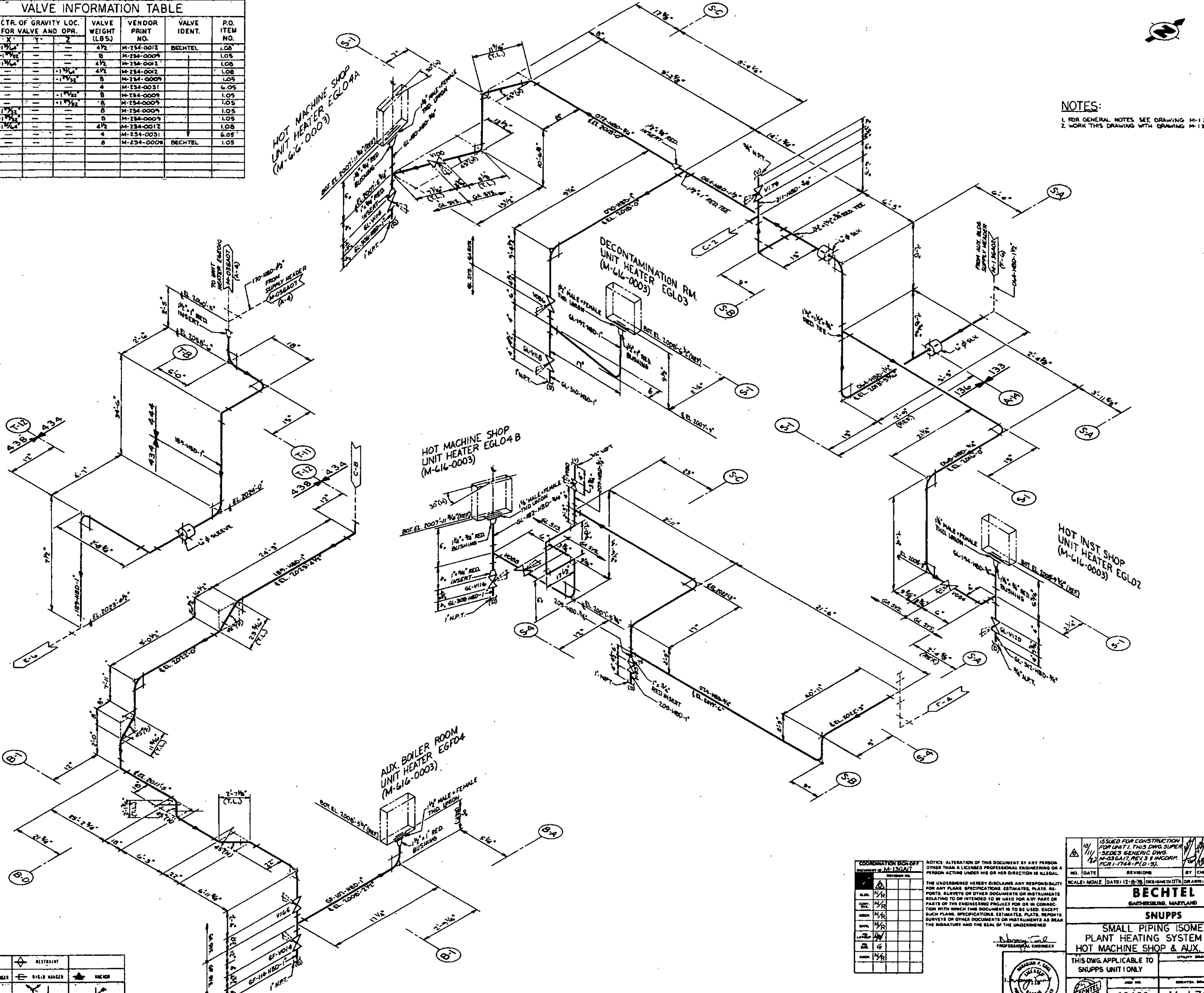
DRAWING NUMBER: M-13GA03

REV: 02

M-13GA17

VALVE INFORMATION TABLE

VALVE NO.	CTR. OF GRAVITY LOC. FOR VALVE AND OPR. X	Y	Z	VALVE WEIGHT (LBS.)	VENDOR PRINT NO.	VALVE IDENT.	P.O. ITEM NO.
V084	-1 13/64"	—	—	4½	M-234-0012	BECHTEL	1.08
V086	-1 23/32"	—	—	8	M-234-0009		1.05
V088	+1 13/64"	—	—	4½	M-234-0012		1.08
V100	—	—	+1 13/64"	4½	M-234-0012		1.08
V165	—	—	-1 23/32"	8	M-234-0009		1.05
V179	—	—	—	4	M-234-0031		6.05
GF-V014	—	—	-1 23/32"	8	M-234-0009		1.05
GL-V114	—	—	+1 23/32"	8	M-234-0009		1.05
GL-V116	+1 23/32"	—	—	8	M-234-0009		1.05
GL-V118	-1 23/32"	—	—	8	M-234-0009		1.05
GL-V120	-1 13/64"	—	—	4½	M-234-0012		1.08
V180	—	—	—	4	M-234-0031		6.05
V183	—	—	—	8	M-234-0009	BECHTEL	1.05



NOTES:

1. FOR GENERAL NOTES SEE DRAWING M-13GA01.
2. WORK THIS DRAWING WITH DRAWING M-13GA02 & M-03GA07.

COORDINATION SIGN-OFF DOCUMENT ID M-13GA17

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PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS
0	10/11/82	ISSUED FOR CONSTRUCTION FOR UNIT 1. THIS DWG. SUPERSEDES GENERIC DWG. M-03GA17, REV. 3 & INCORP. FCR 1-1744-P(D-5).

SCALE: NONE | DATE: 12-8-78 | DESIGNED: DTK | DRAWN: DTK

BECHTEL
GAITHERSBURG, MARYLAND

SNUPPS

SMALL PIPING ISOMETRIC
PLANT HEATING SYSTEM SUPPLY
HOT MACHINE SHOP & AUX. BOILER RM.

THIS DWG. APPLICABLE TO SNUPPS UNIT 1 ONLY

JOB NO. 10466 | BECHTEL DRAWING NO. M-13GA17 | REV. 0

REVIEW LEVEL 4

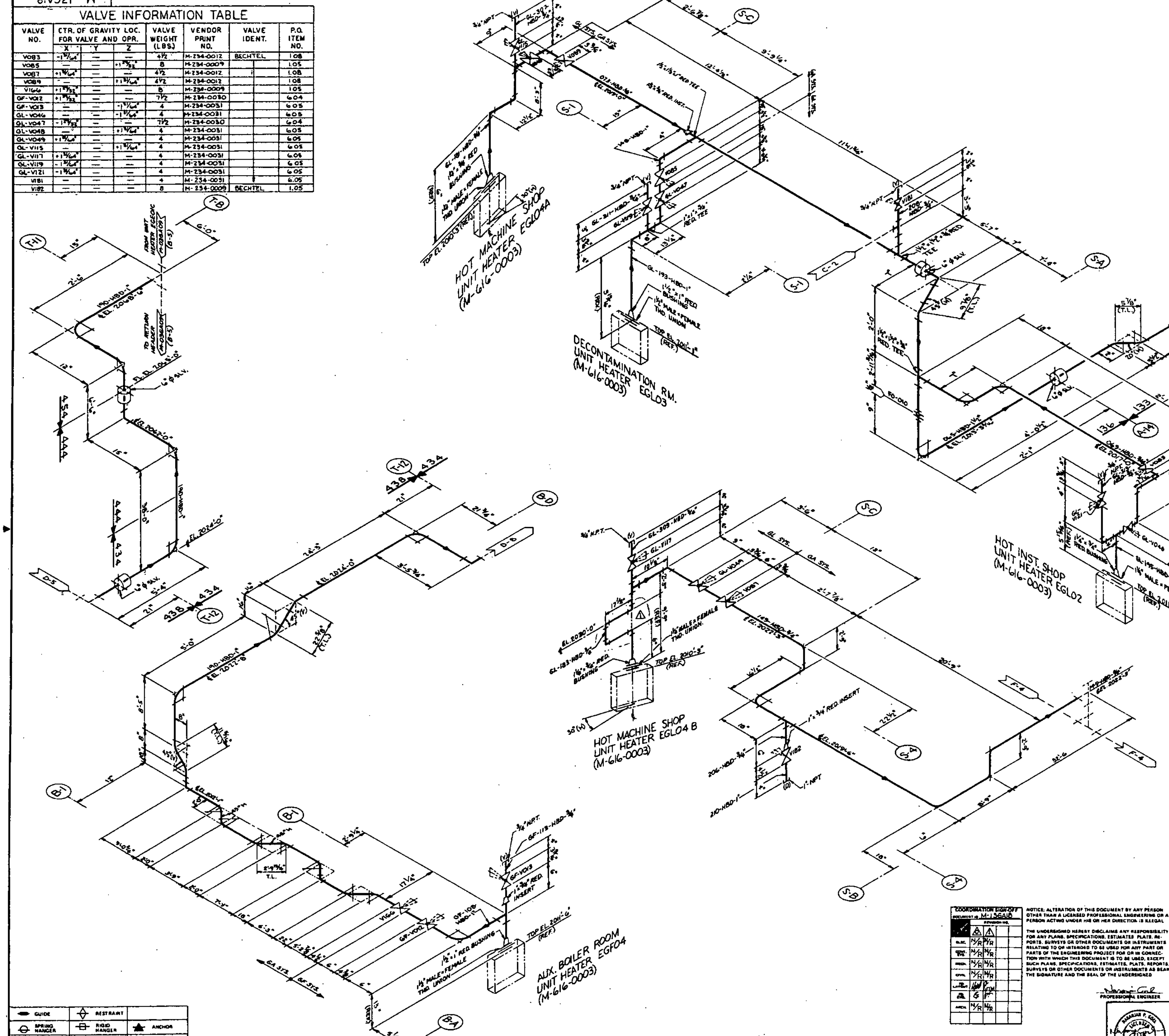
AREA 444: 32'-0" | AREA 438: 95'-0" | AREA 434: 12'-0" | AREA 156: 165'-0" | AREA 133: 4'-0" | TOTAL: 308'-0"

"E" SIZE

M - 13GA18

VALVE INFORMATION TABLE

VALVE NO.	CTR. OF GRAVITY LOC. FOR VALVE AND OPR. X	Y	Z	VALVE WEIGHT (LBS)	VENDOR PRINT NO.	VALVE IDENT.	P.O. ITEM NO.
V083	-1 31/64"	—	—	4½	M-234-0012	BECHTEL	1.08
V085	—	—	+1 27/32"	8	M-234-0009		1.05
V087	+1 11/64"	—	—	4½	M-234-0012		1.08
V089	—	—	+1 31/64"	4½	M-234-0012		1.08
V166	+1 27/32"	—	—	8	M-234-0009		1.05
GF-V012	+1 29/32"	—	—	7½	M-234-0030		6.04
GF-V013	—	—	-1 31/64"	4	M-234-0031		6.05
GL-V046	—	—	-1 31/64"	4	M-234-0031		6.05
GL-V047	-1 29/32"	—	—	7½	M-234-0030		6.04
GL-V048	—	—	+1 31/64"	4	M-234-0031		6.05
GL-V049	+1 31/64"	—	—	4	M-234-0031		6.05
GL-V115	—	—	+1 31/64"	4	M-234-0031		6.05
GL-V117	+1 31/64"	—	—	4	M-234-0031		6.05
GL-V119	-1 31/64"	—	—	4	M-234-0031		6.05
GL-V121	-1 31/64"	—	—	4	M-234-0031		6.05
V181	—	—	—	4	M-234-0031		6.05
V182	—	—	—	8	M-234-0009	BECHTEL	1.05



NOTES:

1. FOR GENERAL NOTES SEE DRAWING M-13GA01.
2. WORK THIS DRAWING WITH DRAWING M-03GA04 & -09.

GUIDE | RESTRAINT | SPRING HANGER | RIGID HANGER | ANCHOR | DIRECTION OF RESTRAINT | DIRECTION OF EXPANSION | SNUBBER

COORDINATION SIGN-OFF DOCUMENT NO. M-13GA18

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PROFESSIONAL ENGINEER

REVIEW LEVEL 4

NO.	DATE	REVISIONS
1	5/5/84	(D-5) INC. FCR-1-4300-P.
0	10/11/82	ISSUED FOR CONSTRUCTION FOR UNIT I. THIS DWG. SUPERSEDES GENERIC DWG. M-03GA18, REV. 4 & INCORP. FCR 1-1744-P (C-4, D-5).

SCALE: NONE | DATE: 12-18-78 | DESIGNED: DTK | DRAWN: DTK

BECHTEL
GAITHERSBURG, MARYLAND

SNUPPS

SMALL PIPING ISOMETRIC
PLANT HEATING SYSTEM RETURN
HOT MACHINE SHOP & AUX. BOILER RM.

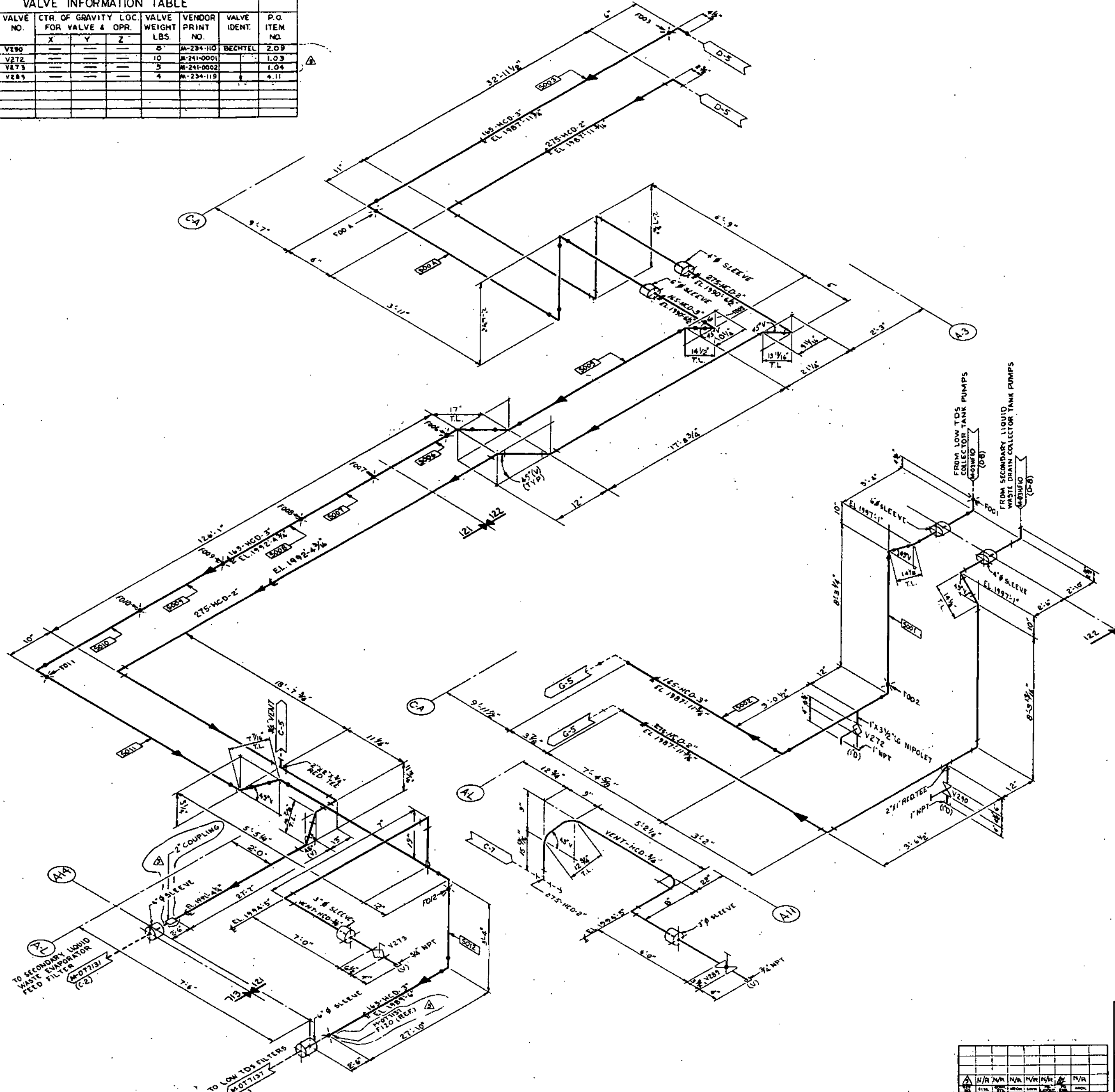
THIS DWG. APPLICABLE TO SNUPPS UNIT 1 ONLY

JOB NO. 10466 | BECHTEL DRAWING NO. M-13GA18 | REV 1

"E" SIZE

M-03HF01

VALVE INFORMATION TABLE							
VALVE NO.	CTR. OF GRAVITY LOC. FOR VALVE & OPR.			VALVE WEIGHT LBS.	VENDOR PRINT NO.	VALVE IDENT.	P.O. ITEM NO.
	X	Y	Z				
V290	—	—	—	8	M-234-110	BECHTEL	2.09
V272	—	—	—	10	M-241-0001		1.03
V273	—	—	—	5	M-241-0002		1.04
V289	—	—	—	4	M-234-119		4.11



NOTES:

1. FOR WEIGHT AND MATERIAL OF PIPE, VALVES AND FITTINGS, SEE MATERIAL SPECIFICATIONS DRAWING, 10466-MS-2.
2. FOR PIPING AND INSTRUMENT DIAGRAMS, THIS SYSTEM SEE M-02HF01 THROUGH M-02HF05.
3. THIS SYSTEM INCORPORATES DRAWINGS M-03HF01 THROUGH M-03HF20.
4. UNLESS OTHERWISE INDICATED, NO ALLOWANCE HAS BEEN MADE FOR WELDED JOINTS OR GASKETS.
5. FOR BRANCH CONNECTION DETAILS SEE 10466-MS-4.
6. FOR WELD END PREPARATION DATA SEE 10466-MS-6.
7. FOR END TRANSITION DETAILS SEE 10466-MS-7.
8. FOR INSULATION THICKNESS SEE SPECIFICATION FOR HEAT INSULATION MATERIAL MS-1.
9. FOR LINE DESIGNATIONS SEE 10466-MS-1.
10. FOR VALVE REQUIREMENT SHEETS SEE QTS LOG.
11. FOR EQUIPMENT ITEM NUMBERS SEE SNUPPS EQUIPMENT LIST.
12. FOR MAIN LINE INSTRUMENT CONNECTION DETAILS SEE 10466-J-07G18.
13. WHERE FLAT FACED FLANGES OCCUR ON EQUIPMENT CONNECTIONS, MATING FLANGES ARE TO BE FLAT FACED.
14. FOR P&ID LEGEND SEE DWG. 10466-M-20101 THRU 10466-M-20104.
15. FOR SOCKET WELD AND THREADED HALF-COUPLING DETAILS SEE 10466-MS-9.
16. SLEEVES SHOWN ARE SUPPLIED BY OTHERS.
17. ALL PIPING 2" AND SMALLER IS TO BE FIELD FABRICATED IN ACCORDANCE WITH 10466-M-205.
18. SHOP FABRICATION OF PIPES EXCEPT PREASSEMBLED FORMATIONS SHALL BE IN ACCORDANCE WITH SPECIFICATION 10466-M-202B. PREASSEMBLED FORMATIONS SHALL BE IN ACCORDANCE WITH SPECIFICATION 10466-M-207
19. "SW" DENOTES SOCKET WELD CONNECTION. DIMENSIONS SHOWN ARE TO FACE OF NOZZLE. ALLOWANCE MUST BE MADE FOR SOCKET DEPTH.
20. STAINLESS STEEL PIPING IN THIS SYSTEM SHOULD BE WITHOUT BACKING RINGS AS IDENTIFIED IN 10466-MS-2.
21. WORK THIS DWG. WITH DWGS. M-03HF10 & M-0T7131.

5	N/R	N/R	N/R	N/R	N/R		N/R	
REV NO.	ELEC.	CONT. SYS.	MECH.	CIVIL	PIPE LAYOUT	PIPE DES.	ARCH.	

COORDINATION SIGN-OFF

DOCUMENT IDENTIFICATION M-03HF01

REVIEW LEVEL 4

LAST NUMBER USED:
F.W. NO F012 DELETED
SPOOL NO. 5012 DELETED

SMALL PIPE 299'-9½" BELOW 2000
LARGE PIPE 280'

NO	DATE	REVISIONS	BY	CHK	DES. SUPV.	ENGR.	PROJ. ENGR.	APPR.
5	3/4/81	ADDED 1 2 PROF. SEALS, NOTES 20 & 21, COUPLING (B-7), F120 (A-6); REVISED: NOTE 3 (G-1), VALVE TABLE						
4	5/2/78	E-1 ADDED NOTE 19; C-7 RELOCATED RED. TEE; B-6 ADDED VENT PIPING & VALVE V273; B-5 ADDED VENT PIPING & VALVE V289						
3	7/ /77	H-6 32'-11½" DIM. WAS 30'-11½" 5003						
2	7/7/77	E-1 ADDED NOTE 18. LINE 275-HCD-2" WAS 008-HCD-2". ADDED LINE NO. 165-HCD-3"						
1		C-4 4" φ SLV. WAS 8"; G-3, E-6 ADDED VENTS; E-7, 12G-1 WAS 126'-8"; E-5 ADDED DRAIN; E-4 18'-0" WAS 19'-0"; C-7 MOD. HF-008-HCD-2"						
0	3/4/76	ISSUED FOR CONSTRUCTION						

SCALE NONE | DATE 9-23-75 | DESIGNED | DRAWN GLP | CHIEF ENGR.

BECHTEL
GAITHERSBURG, MARYLAND

SNUPPS

PIPING ISOMETRIC
SECONDARY LIQUID WASTE
AUXILIARY BUILDING

JOB NO.	BECHTEL DRAWING NO.	REV
10466	M-03HF01	5

DRAWING APPLICABLE TO UNITS 1 2 3 4 5 6 7 8

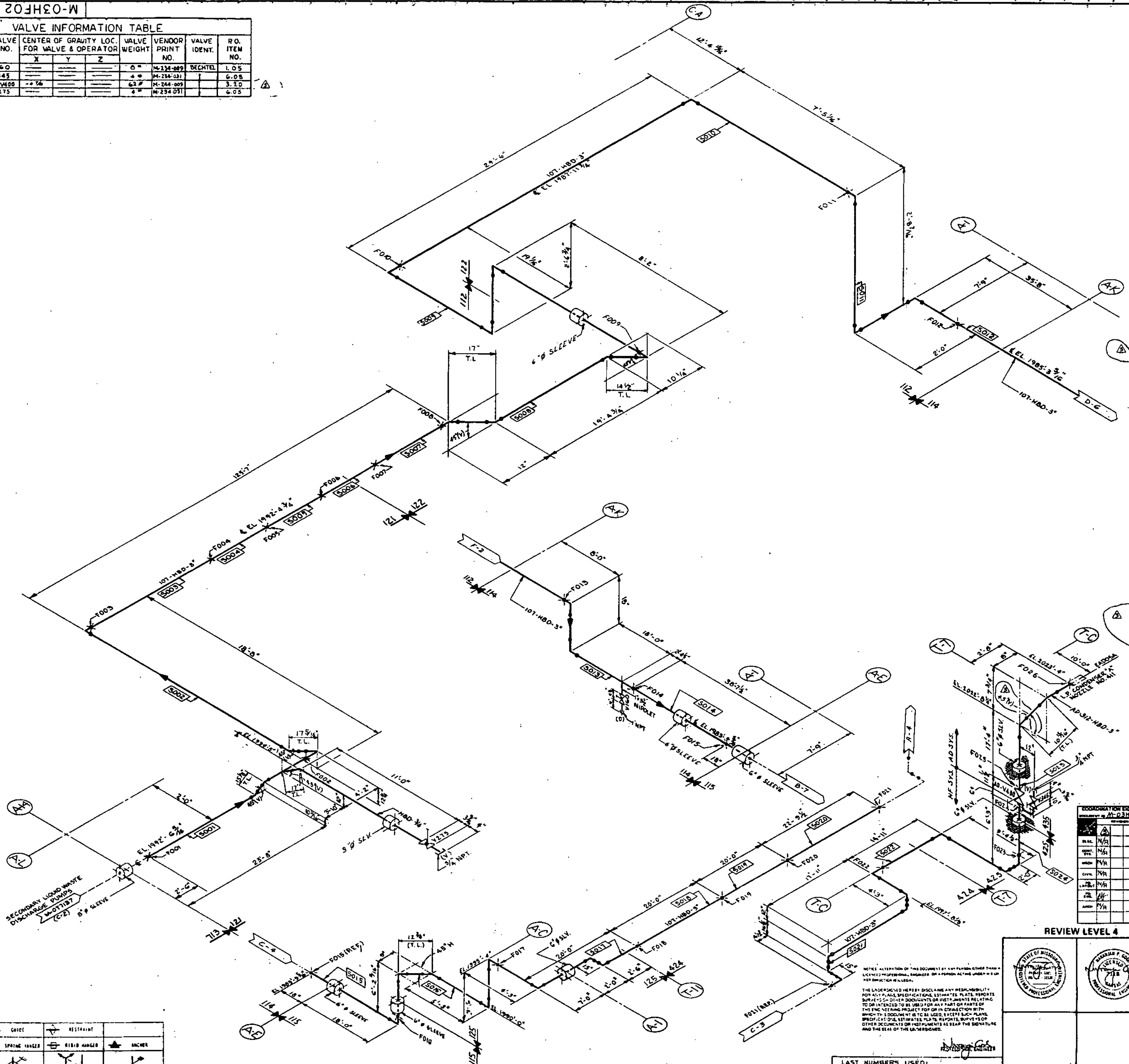
GUIDE — RESTRAINT — SPRING HANGER — RIGID HANGER — ANCHOR — DIRECTION OF RESTRAINT — DIRECTION OF EXPANSION — SNUBBER

24x44 "E" SIZE

M-03HF02

VALVE INFORMATION TABLE

VALVE NO.	CENTER OF GRAVITY LOC. FOR VALVE & OPERATOR X	Y	Z	VALVE WEIGHT	VENDOR PRINT NO.	VALVE IDENT.	P.O. ITEM NO.
V160	—	—	—	8 #	M-234-009	BECHTEL	1.05
V345	—	—	—	4 #	M-234-031		6.05
AD-V400	-4 ⅞	—	—	62 #	M-244-009		3.20
V-275	—	—	—	4 #	M-234-031		6.05



NOTES:

1. FOR WEIGHT AND MATERIAL OF PIPE, VALVES AND FITTINGS, SEE MATERIAL SPECIFICATIONS DRAWINGS, 10466-MS-2.
2. FOR PIPING AND INSTRUMENT DIAGRAMS, THIS SYSTEM SEE M-02HF01 THROUGH M-02HF03.
3. THIS SYSTEM INCORPORATES DRAWINGS M-03HF01 THROUGH M-03HF20.
4. UNLESS OTHERWISE INDICATED, NO ALLOWANCE HAS BEEN MADE FOR WELDED JOINTS OR GASKETS
5. FOR BRANCH CONNECTION DETAILS SEE 10466-MS-4.
6. FOR WELD END PREPARATION DATA SEE 10466-MS-6.
7. FOR END TRANSITION DETAILS SEE 10466-MS-7.
8. FOR INSULATION THICKNESS SEE 10466-MS-1.
9. FOR LINE DESIGNATIONS SEE 10466-MS-1.
10. FOR VALVE REQUIREMENT SHEETS SEE QTS LOG.
11. FOR EQUIPMENT ITEM NUMBERS SEE SNUPPS EQUIPMENT LIST.
12. FOR MAIN LINE INSTRUMENT CONNECTION DETAILS SEE 10466-J-07G1B.
13. WHERE FLAT FACED FLANGES OCCUR ON EQUIPMENT CONNECTIONS, MATING FLANGES ARE TO BE FLAT FACED.
14. FOR P&ID LEGEND SEE DWG. 10466-M-20101 THROUGH 10466-M-20104.
15. FOR SOCKET WELD AND THREADED HALF-COUPLING DETAILS SEE 10466-MS-9.
16. SLEEVES SHOWN ARE SUPPLIED BY OTHERS.
17. WHERE FIELD WELD LOCATIONS ARE NOT DIMENSIONED, USE RANDOM 20 FEET LENGTHS TO MAINTAIN OVERALL DIMENSIONS.
18. STAINLESS STEEL PIPING IN THIS SYSTEM SHOULD BE WITHOUT BACKING RINGS AS IDENTIFIED IN 10466-MS-2.
19. WORK THIS DRAWING WITH DRAWING M-07T157.

LAST NUMBERS USED:
F.W. NO. F026 DELETED:
SPOOL NO. S024 DELETED:

REVIEW LEVEL 4

NO	DATE	REVISIONS
5	3/6/81	ADDED: TWO PROF. SEALS, NOTES 18 & 19 (D-1), 45°(V) (C-2), REVISED: VALVE TABLE (H-8), NOTE 3 (F-1)
4	7/7/78	INC. DCN. M-03HF02-3-1 D-2 ADDED FW-F026 C-6 ADDED HBD-¾ PIPING & VALVE V275 FOR VENT
3	10/17/77	H-7 ADDED P.O. ITEM NO.'S C-4 22'-9¼" DIM WAS 24' 8¼". C-2 ADDED FIELD WELDS, F024, F025 & SPOOL S024 REMOVED HOLD ON VALVE AD-V400 AND SPOOL S023 B-4 11'-11" DIM WAS 16'-0" B-4 16⅞" DIM WAS 22⅞ A-6 EL. 1995'-6" WAS EL. 1976'-10" AND 5'-4" DIM WAS 4'-10" S016, S020 & S021.
2		ADDED PIPING FROM A-E TO CONDENSER. H-5 MODIFIED LINE NO. HF-107-HCD-3" D-7 EL. 1992'-4¾ WAS 1992'-6⅝" C-7 15⅛" DIM. WAS 6½" 17⅝" DIM. WAS 6½" C-6 10 1/16" DIM. WAS 4⅝" 12¼" DIM. WAS 4⅝"
1	10/8/76	C-6 ADDED VENT, MODIFIED HF-107-HCD-3" ROUTING, HF-107-HCD-3" WAS 6" C-5 ADDED DRAIN C-4 REMOVED HOLD ON HF-107-HCD-3" PIPE SLEEVES WERE 10"
0	3/4/76	ISSUED FOR CONSTRUCTION

SCALE NONE | DATE 10-4-75 | DESIGNED | DRAWN GLR

BECHTEL
GAITHERSBURG, MARYLAND

SNUPPS

PIPING ISOMETRIC SECONDARY LIQUID WASTE AUXILIARY BUILDING

JOB NO.	BECHTEL DRAWING NO.	REV
10466	M-03HF02	5

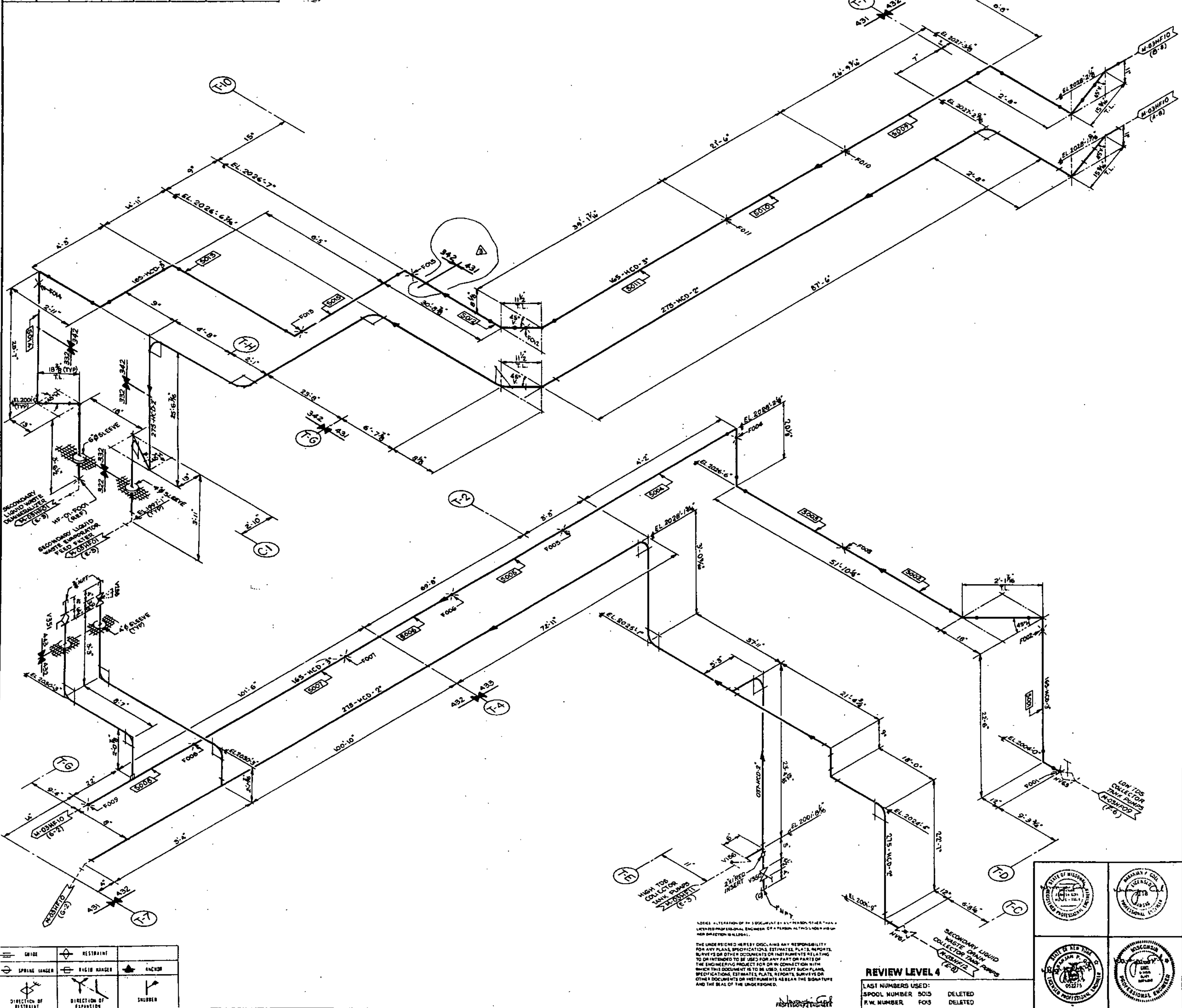
DRAWING APPLICABLE TO UNITS 1 2 3 4 5 6 7 8

"E" SIZE 34x44

M-03HF10

VALVE NO.	CTR. OF GRAVITY LOC. FOR VALVE & OPR.			VALVE WEIGHT	VENDOR PRINT NO.	VALVE IDENT.	P.O. ITEM NO.
	X	Y	Z				
V288	—	—	—	4"	M-234-0019	BECHTEL	4.11
V350	—	—	—	6"	M-234-0110	BECHTEL	2.09
V351	—	—	—	5"	M-241-0002	BECHTEL	1.04

VALVE INFORMATION TABLE



NOTES:
FOR NOTES SEE DWG. NO. M-03HF01.

REVIEW LEVEL 4

LAST NUMBERS USED:
SPOOL NUMBER 5015 DELETED
F.W. NUMBER F015 DELETED

NO.	DATE	REVISIONS	BY	CHK		ENGR	PROJ ENGR	APPR
3	1/29/80	UPDATED VALVE TABLE F-G ADDED AREA BREAK ADDED FOUR PROF. SEALS						
2		INC. DCN M-03HF10-1-1 & M-03HF10-1-2. F-4 87'-6" DIM. WAS 105'-11"						
1	11/23/77	E-7 MOD. LINES 165-HCD-3", 275-HCD-2", ADDED 5015, F015. B-4 MOD. LINE 037-HCD-2", 37'-11" DIM. WAS 41'-11½", 21'-4⅝" DIM. WAS 17'-4" A-3 90° ELBOW WAS BEND.						
0	7/21/77	ISSUED FOR CONSTRUCTION						

SCALE NONE | DATE 5-23-77 | DESIGNED RRB | DRAWN O.G.

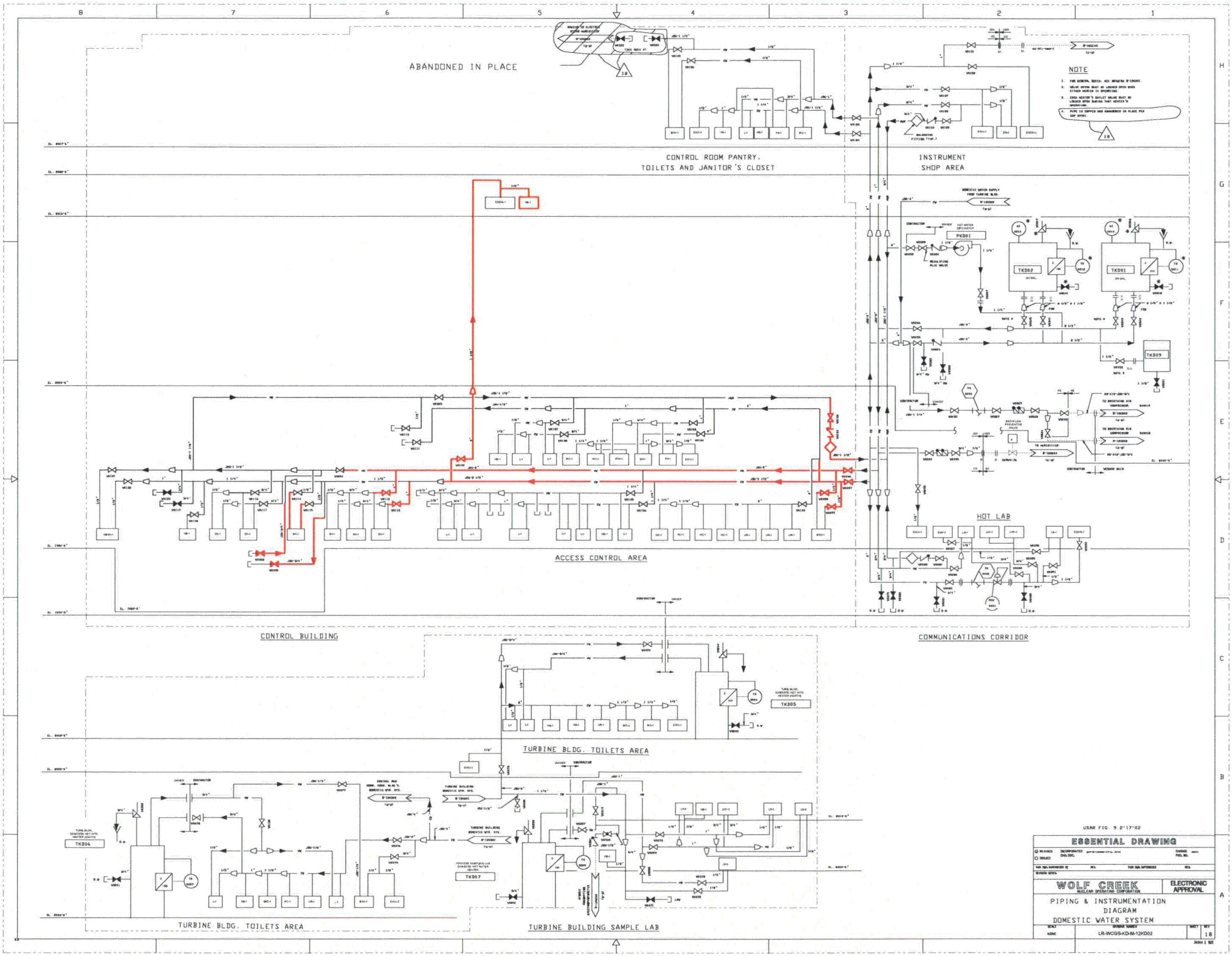
BECHTEL
GAITHERSBURG, MARYLAND

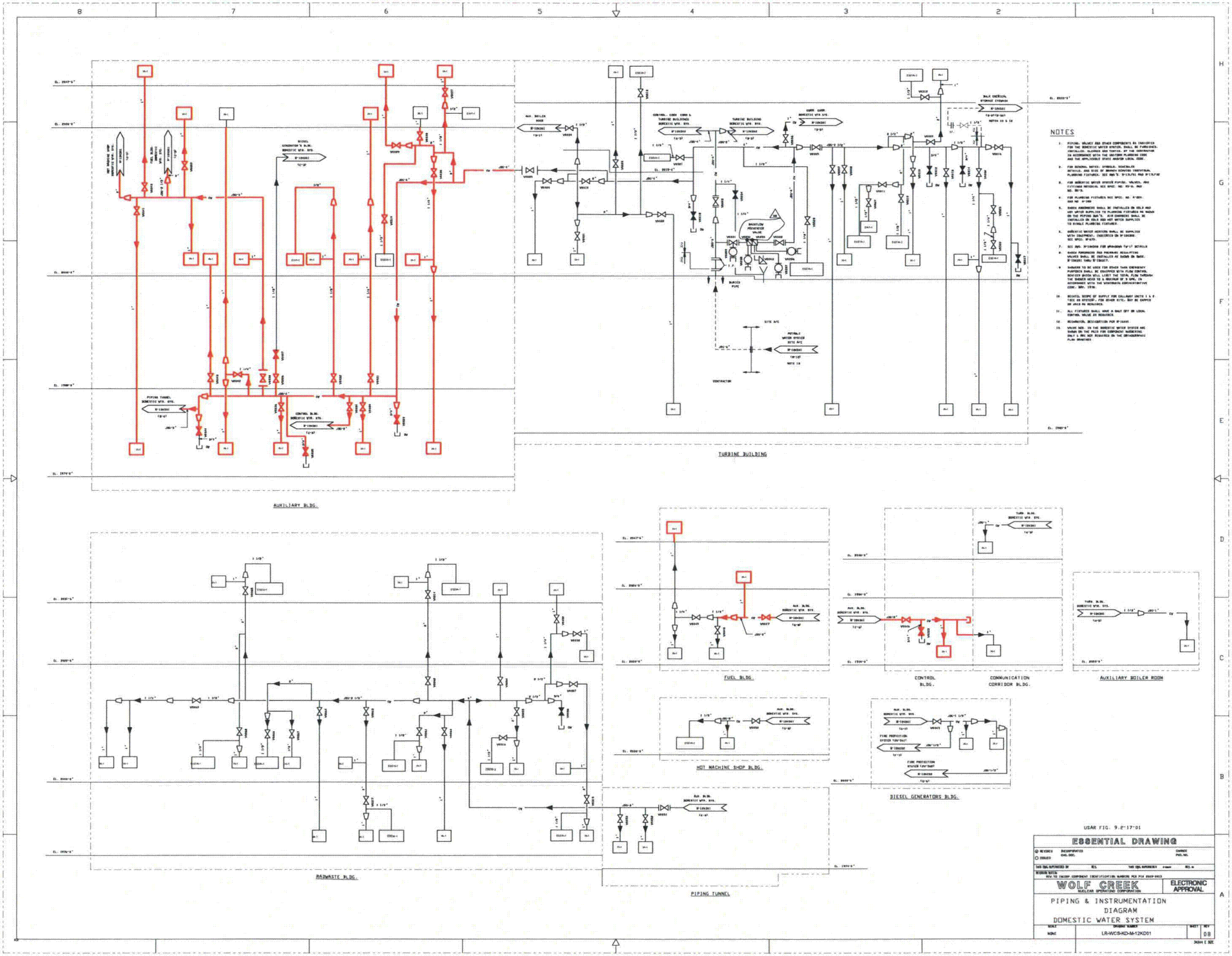
SNUPPS

PIPING ISOMETRIC
SECONDARY LIQUID WASTE SYS.
COMM. CORRIDOR & TURBINE BLDG.

JOB NO.	BECHTEL DRAWING NO.	REV.
10466	M-03HF10	3

SIZE E


ABANDONED IN PLACE
CONTROL ROOM PANTRY,
TOILETS AND JANITOR'S CLOSET
INSTRUMENT
SHOP AREA
NOTE
TKD02
TKD01
TKD03
HOT LAB
ACCESS CONTROL AREA
CONTROL BUILDING
COMMUNICATIONS CORRIDOR
TKD05
TURBINE BLDG. TOILETS AREA
TKD04
TKD07
TURBINE BLDG. TOILETS AREA
TURBINE BUILDING SAMPLE LAB
USAR FIG. 9.2-17-02
ESSENTIAL DRAWING
WOLF CREEK
NUCLEAR OPERATING CORPORATION
ELECTRONIC
APPROVAL
PIPING & INSTRUMENTATION
DIAGRAM
DOMESTIC WATER SYSTEM
NONE
LR-WCGS-KD-M-12KD02
18



NOTES
AUXILIARY BLDG.
TURBINE BUILDING
RADWASTE BLDG.
PIPING TUNNEL
FUEL BLDG.
HOT MACHINE SHOP BLDG.
CONTROL BLDG.
COMMUNICATION CORRIDOR BLDG.
AUXILIARY BOILER ROOM
DIESEL GENERATORS BLDG.
USAR FIG. 9.2-17-01
ESSENTIAL DRAWING
REVISED
ISSUED
WOLF CREEK
NUCLEAR OPERATING CORPORATION
ELECTRONIC APPROVAL
PIPING & INSTRUMENTATION
DIAGRAM
DOMESTIC WATER SYSTEM
NONE
LR-WCS-KD-M-12KD01
08