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Indian Point Energy Center
Unit 3
FAC System Susceptibility Evaluation (SSE)

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1. Introduction

Flow-Accelerated Corrosion (FAC) is a form of material degradation that results in thinning of the inside pipe wall in carbon steel piping and fittings under certain flow and chemistry conditions. If undetected, FAC may result in piping rupture and subsequent fatalities, injuries, equipment damage, unplanned plant shutdown, and transients that pose undesirable challenges to plant operators. Consequently, all US nuclear plants, including Indian Point, have FAC programs in place to detect and mitigate FAC before piping failure in accordance with Generic Letter 89-08 [7.1].

An effective FAC program includes three key elements: the System Susceptibility Evaluation (SSE), which defines and controls the program scope; the CHECWORKS computer model, which predicts wear rates for every modeled component; and the Susceptible Non-Modeled (SNM) Program, which prioritizes non-modeled but susceptible lines according to FAC potential.

2. Purpose

This document contains the development and results of an FAC System Susceptibility Evaluation (SSE) for Indian Point Energy Center Unit 3. Each plant system, subsystem, and line is classified as either susceptible or non-susceptible to FAC. Susceptible piping forms the scope of the Indian Point FAC program, while non-susceptible piping is excluded from the FAC program. Susceptible piping is further categorized as either modelable in the EPRI computer program CHECWORKS Steam/Feedwater Application (SFA) or non-modelable. Susceptible Non-Modeled (SNM) piping falls outside the capabilities of CHECWORKS SFA.

The purpose of this document is to:

- Define the scope of the Flow-Accelerated Corrosion (FAC) program.
- Identify all plant lines to be modeled in the EPRI computer program CHECWORKS Steam/Feedwater Application (SFA).
- Identify all plant lines that form the scope of the Susceptible Non-Modeled (SNM) program.

3. Scope

The scope of this System Susceptibility Evaluation is all plant piping, which includes piping in all systems, subsystems, and lines. This document reflects the current operating status of the plant. Periodic review and update of this document is recommended by EPRI'S "Recommendations for an Effective Flow-Accelerated Corrosion Program," NSAC 202L [7.2].

Section 4 of this document contains a record of all assumptions made. Section 5 describes the methodology employed in this analysis. The results obtained are documented in Section 6 and in the Appendices. Finally, Section 7 includes a list of all references used in this analysis.

4. Assumptions

4.1. General Assumptions

The following assumptions apply to all plant systems, subsystems, or lines.

4.1.1. Piping with nominal pipe size less than or equal to 2” is assumed to be socket welded. Likewise, lines over 2” in diameter are assumed butt-welded.

4.1.2. Wherever pipe class is unknown, carbon steel material is assumed.

4.1.3. If a portion of a system, subsystem, or line is susceptible, then the entire system, subsystem, or line is considered susceptible. An exception is made for lines where valves are the only susceptible components. Since valves are inspected by the Preventative Maintenance or Corrective Action programs, they are considered outside the FAC program.

4.1.4. Lines on the Indian Point P&IDs [7.3] containing normally closed valves are assumed to operate less than 2% of the time. Likewise, lines containing valves that are normally open are assumed to operate greater than 2% of the time. This assumption is used when specific valve information is not found in the System Descriptions [7.4] or in correspondence with Indian Point plant personnel [7.5].

4.1.5. It is assumed that no normally closed valves leak, unless confirmed otherwise by plant operating history.

4.1.6. Lines that exist in non-susceptible systems or subsystems are excluded from further analysis on the system or subsystem level, respectively. These lines may or may not appear in the Appendices.

4.2. System, Subsystem, and Line Specific Assumptions

Assumptions and susceptibility decisions made specifically for a single system, subsystem, or line appear in the Comments field of the Susceptibility Evaluation reports in the Appendices.

4.2.1. Instrumentation, level control lines, and indicator lines are assumed to have insufficient flow to be susceptible to FAC.

4.2.2. Floor drains, miscellaneous capped drain and vent lines, and miscellaneous vent lines to the atmosphere are assumed to have insufficient flow to be susceptible to FAC (or operate infrequently).

4.2.3. Multiple line names are used for the same line in cases where susceptibility changed along the line and in cases where relationships to CHECWORKS are simplified by separating sections of lines.

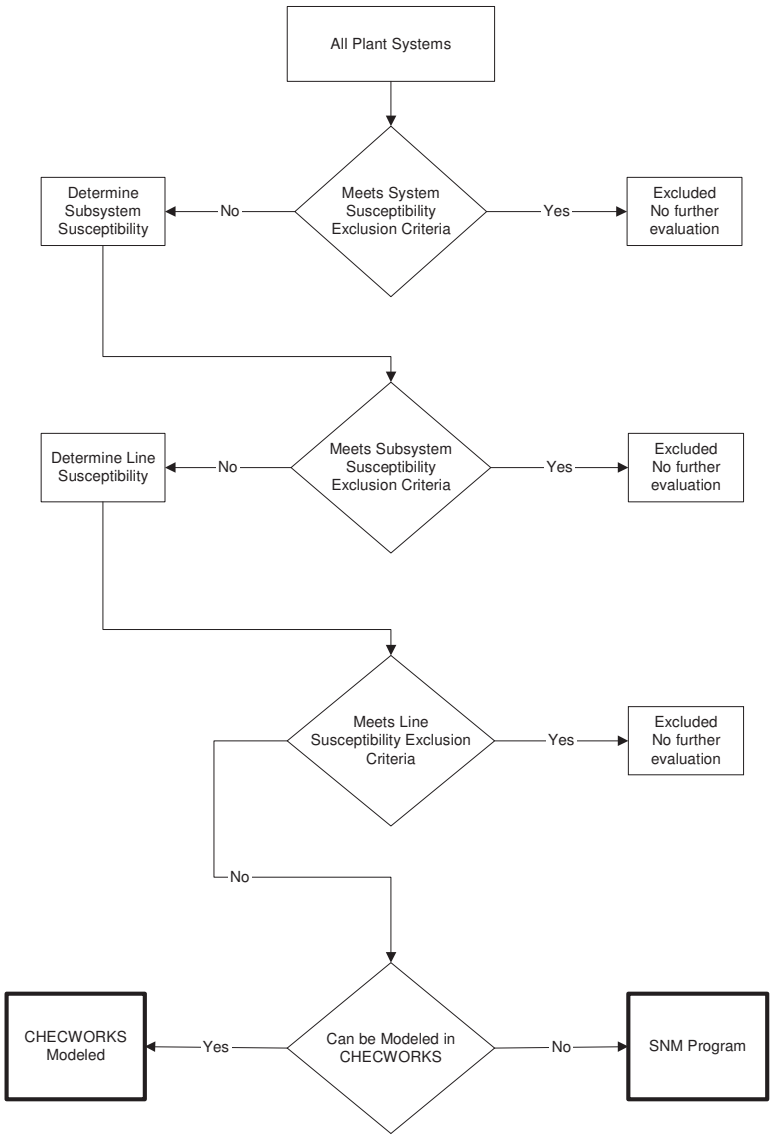
4.2.4. The supply and return headers to the OSB building, line numbers 3-UH-178 and 3-UH-177, are continued on a drawing that could not be located by Indian Point personnel [7.5.3]. It was concluded that the continuations of these lines, as well as any lines fed by these headers, should be considered FAC-susceptible until proven otherwise.

5. Methodology

The methodology employed in this analysis consisted of a number of successive steps. Each step is explained in detail in the following sections. A flowchart of the methodology used is included in the Figure 5.1.

Each plant system, subsystem, and line was reviewed against FAC susceptibility criteria and CHECWORKS modelability criteria (as defined in Section 5.1 and Section 5.2) to determine its susceptibility category. If an entire system or subsystem was determined to be non-susceptible, a line-by-line review was not conducted; however, where that was not the case, each line was evaluated and categorized accordingly and individually.

Figure 5.1 Susceptibility Evaluation Methodology



5.1. Susceptibility Exclusion Criteria

The criteria used to determine susceptibility to FAC was taken from Section 4.2 of EPRI NSAC 202L [7.2]. Systems, subsystems, and/or lines are not considered susceptible to FAC if one or more of the conditions discussed below apply.

5.1.1. FAC Resistant Material

Stainless steel or low-alloy steel with chromium content equal or greater than 1.25% is FAC-resistant [7.2 and 7.6]. Lines or systems made or replaced with such materials are not sufficiently susceptible to FAC to warrant further analysis. It should be noted, however, that resistance to FAC does not ensure against other corrosion mechanisms such as cavitation or impingement. Therefore, even if components are replaced with FAC-resistant material, the root cause of wear should be determined before excluding the replaced components from the inspection program.

Wholesale replacement of a line with FAC resistant material would cause that line to be excluded from the FAC program. However, if one component on a line is susceptible, then the whole line was considered susceptible.

Piping material was obtained from the Piping Specifications [7.7], P&IDs [7.3], and the Indian Point isometric drawings [7.8].

5.1.2. Superheated Steam

Piping which transports superheated steam with no moisture content is classified as non-susceptible. According to EPRI's "Recommendations for an Effective Flow-Accelerated Corrosion Program", FAC is known to occur only under flowing water or wet steam conditions, and has not been documented in superheated steam piping [7.2].

The PEPSE Model [7.9] was used as the primary source of operating condition information. Secondary information was found in the Piping Specification [7.7].

5.1.3. Single-Phase Piping at Low Temperature

Piping with single-phase flow and an operating temperature below 200°F does not experience FAC and is classified as non-susceptible. No temperature exclusion exists for two-phase lines [7.2]. Other degradation mechanisms, such as cavitation, may occur at low temperatures but such mechanisms are outside the scope of this analysis.

Operating temperature was obtained from the PEPSE Model [7.9] as a first priority, followed by the operating conditions found in the Piping Specification [7.7].

5.1.4. Low Operating Frequency

Piping that operates less than 2% of the plant operating time was deemed non-susceptible. In general, such piping does not experience the amount of flow required to make FAC a legitimate concern and is excluded from

further analysis in favor of piping with greater FAC susceptibility. Piping in this category includes lines with normally closed valves and those feeding or emerging from equipment which operate less than 2% of the plant operating time.

Exceptions to this rule are made when the operating frequency may be low, but the service is especially severe [7.2].

All lines excluded due to infrequent operation would be susceptible to FAC if operating frequency is increased above the 2% threshold. Therefore, if operating frequency is increased, these lines should be reviewed for inclusion into the FAC Program.

Operating frequency was determined through information found in the System Descriptions [7.4], responses to questions posed to Indian Point personnel [7.5], and by valve position on the P&IDs [7.3]. See Assumption 4.1.4 for more details.

5.1.5. Combination Single-Phase Piping with Low Temperature and Operating Frequency

This category is a derivative of the two previous susceptibility criteria described in Sections 5.1.3 and 5.1.4. It may be used for a system, subsystem, and/or a line that operates >2% of total plant operating time but only occasionally (<2% of the time) will the temperature of the single-phase fluid, within the piping, exceed 200°F. Thus, piping containing a single-phase flow that operates less than 2% of the time above 200°F is classified as non-susceptible to FAC.

5.1.6. Non-Water/Steam Piping

Piping that transports fluids other than water or steam, such as air or oil, is not susceptible to FAC.

5.1.7. Dissolved Oxygen Concentration

Lines containing water with high levels of dissolved oxygen (typically greater than 1000 ppb) are considered immune to FAC and can be excluded from further analysis [7.2]. Systems normally meeting this criterion include Service Water, Circulating Water, and Fire Protection.

5.1.8. Low or No Flow

While instrumentation and/or sensing lines may operate continuously, they experience very limited fluid flow. Such piping does not experience the amount of flow required to make FAC a legitimate concern and is excluded from further analysis in favor of piping with greater FAC susceptibility.

5.1.9. Non-Piping

Systems that do not contain piping (e.g. computer system) are excluded from the FAC program.

5.1.10. Piping Removed from Service

Piping that has been removed from service and capped is excluded from the FAC program. Degradation mechanisms may occur in such piping, but for Flow-Accelerated Corrosion to occur, flow is required [7.2].

Table 5.1 provides a summary of the FAC susceptibility exclusion parameters discussed in this section. Also provided is the abbreviation used for each criterion.

Table 5.1 Susceptibility Exclusion Criteria

Abbreviation	Reason	Description
EM	Material	**E**xcluded due to FAC-resistant **M**aterial
EQ	Superheated	**E**xcluded due to high steam **Q**uality (superheated steam)
ET	Single Phase, T<200°F	**E**xcluded due to **T**emperature
EI	Time <2%	**E**xcluded due to **I**nfrequent operation (note: would be FAC susceptible if operated at a higher frequency)
EC	Single Phase, T>200°F for time<2%	**E**xcluded due to a **C**ombination of infrequent operation above temperature threshold
EW	Non-water/steam	**E**xcluded due to no **W**ater or steam present
EO	High D.O.	**E**xcluded due to dissolved **O**$_2$ content >1000 ppb
EF	Low or No Flow	**E**xcluded due to Low or No **F**low
EP	Non-Piping	**E**xcluded due to no **P**iping components present
ER	Pipe Removed	**E**xcluded due to **R**emoval of piping from service

5.2. Susceptible Non-Modeled (SNM) Criteria

Each line that is not excluded due to criteria listed in Table 5.1 is determined to be susceptible to FAC. An explicit determination of suitability for CHECWORKS modeling was made for these lines. For each line that is susceptible but unsuitable for modeling, the basis for that determination was recorded. Lines are determined to be non-modelable in CHECWORKS if one or more of the conditions discussed below apply.

5.2.1. Weld Type

Lines with socket-welded fittings are classified as non-modelable. Almost all small bore lines (less than or equal to 2” in diameter) are constructed using socket-welded fittings. The socket weld uses a fit-up gap of variable size. This gap can greatly impact turbulence in piping, which in turn has a

significant impact on wear rate. Since the size of the fit-up gap is unknown, CHECWORKS cannot accurately predict wear for socket-welded components [7.10].

For this analysis, all small bore lines were considered socket-welded and therefore non-modelable (see 4.1.1). In addition, the extremely large linear footage of small-bore lines and the often unknown thermodynamic conditions combine to make detailed modeling of small-bore piping inefficient and sometimes inaccurate.

5.2.2. Unknown Operating Conditions

In cases where operating conditions cannot be accurately obtained or calculated, precise modeling cannot be performed. In addition to chemistry, CHECWORKS requires a value for flow, frequency of operation, and two thermodynamic values (pressure, temperature, quality, or enthalpy) to predict wear. The PEPSE Model was the primary source of flow and thermodynamic conditions [7.9]. Thermodynamic conditions were also obtained from the operating conditions found in the Piping Specification [7.7]. Operating frequency was determined by valve position and flow rate information on the P&IDs [7.3], from information found in System Descriptions [7.4], and through responses to questions posed to Indian Point personnel [7.5].

Where operating conditions were unknown or varied, the lines are classified as SNM.

5.2.3. Conditions outside CHECWORKS Modeling Capabilities

Lines that operate with conditions outside of CHECWORKS modeling capabilities are considered SNM. For example, lines with entrained moisture or vent lines containing non-condensable gases are classified as non-modelable.

5.2.4. Visually Inspected Lines

Lines that are visually inspected during outages do not require modeling. For many plants, this criterion applies to the Turbine crossunder piping.

5.2.5. Localized FAC Susceptibility

Lines that are classified as FAC susceptible only at a single location are deemed non-modelable. Examples include carbon steel nozzles and valves in a low alloy line.

5.2.6. High Steam Quality

Lines that contain very high quality (but not superheated) steam are classified as SNM. Modeling such lines is of little value as CHECWORKS predictions would be trivial.

The PEPSE Model [7.9] was used as a primary source of steam quality. The Pipe Specification [7.7] was used as a secondary source.

Table 5.2 provides a summary of the CHECWORKS model exclusion parameters discussed in this section. Also provided is the abbreviation used for each criterion.

Table 5.2 CHECWORKS Model Exclusion Criteria

Abbreviation	Reason	Description
NS	Socket-welded	**N**on-modeled due to **S**ocket-welds
NC	Unknown conditions	**N**on-modeled due to unknown or varying operating **C**onditions
NM	Conditions outside CHECWORKS modeling capabilities	**N**on-modeled due to conditions outside CHECWORKS **M**odeling capabilities
NV	Visual inspections	**N**on-modeled due to **V**isual inspections
NL	Localized FAC	**N**on-modeled due to **L**ocalized FAC susceptibility
NQ	High Steam Quality	**N**on-modeled due to high steam **Q**uality resulting in CHECWORKS predictions of little value

6. Results

The following sections contain a description of the data found in the appendices.

6.1. System Susceptibility Evaluation

The results of the System Susceptibility Evaluation appear in Appendix A, which lists all plant systems and classifies each as susceptible or non-susceptible to FAC. For those deemed non-susceptible, the reason for exclusion from the FAC program is provided. The following fields appear in this report.

6.1.1. System Code

This field contains the common designation for the system.

6.1.2. System Name

This field contains a brief description or name of the system.

6.1.3. Susceptible?

This field states if the system is FAC susceptible.

6.1.4. Exclusion Criteria (Excl. Crit.)

This field contains the reason why the system is non-susceptible to FAC (see Table 5.1).

6.1.5. Comments

Pertinent information about the system appears in this field.

6.1.6. Reference

References used in determining susceptibility appear in this field.

6.2. Subsystem Susceptibility Evaluation

Susceptible systems were divided into subsystems by grouping lines of similar function. The results of the Subsystem Susceptibility Evaluation appear in Appendix B, where each subsystem included in a susceptible system is evaluated for its FAC susceptibility. For those deemed non-susceptible, the reason for exclusion from the FAC program is provided. The following fields appear in this report.

6.2.1. Subsystem Number

This field contains the number of the subsystem, where a subsystem is a subset of the system piping with similar operating parameters. Subsystem names were created for this evaluation and include the unit number, common system designation and a sequential number in the following format.

A-BBBB-CC

A	Unit Number
BBBB	System Abbreviation
CC	Sequential Number

Example: 3-BFD-01, 3-3EX-02, 3-5EST-01

6.2.2. Subsystem Name

This field contains the name of the subsystem preceded by the system (represented by the system code) that it falls into.

6.2.3. Subsystem Boundary

A description of the lines which are grouped in this subsystem is shown here.

6.2.4. Flow Diagram (P&ID)

This field lists the flow diagram(s) on which the subsystem is found.

6.2.5. FAC Susceptible? (FAC. Sus.?)

This field states if the subsystem is FAC susceptible.

6.2.6. Exclusion Criteria (Excl. Crit.)

This field contains the reason the subsystem is non-susceptible to FAC (see Table 5.1).

6.2.7. Comments

Pertinent information about the subsystem appears in this field.

6.2.8. Reference

References used in determining susceptibility appear in this field.

6.3. Line Susceptibility Evaluation

Lines in FAC susceptible systems were placed into one of three categories:

- Excluded lines (non-susceptible)
- Susceptible lines to be modeled in CHECWORKS
- Susceptible non-modeled (SNM) lines

Appendix C contains the results of the line susceptibility evaluation for Indian Point Energy Center. Appendix C is organized into sections with Section A listing CHECWORKS modeled lines, Section B listing SNM program lines, and Section C listing excluded lines. For SNM lines, the reason for exclusion from the CHECWORKS model is provided. For excluded lines, the reason for exclusion from the FAC program is provided. Not every line in a non-susceptible subsystem was explicitly analyzed and therefore only selected lines will appear in the report (see Section 4.1.6).

The following fields appear in this report.

6.3.1. Line Number

Indian Point does not maintain a complete piping line list. Therefore, line names needed to be created. The majority of main piping lines, depending

on susceptibility, were assigned a unique Line Number. The naming convention follows a format which includes unit number, system abbreviation, a sequential number, and, if necessary, a section designator used either for parts of the same line with different susceptibility characteristics or specifications or for preventing duplicate line names:

A-BBBB-CCC-D

A	Unit Number
BBBB	System Abbreviation
CCC	Sequential Number
D	Section Designator

Examples: 3-2EX-019, 3-MS-093-A, 3-SB-020, 3-5EST-074-C

6.3.2. Size

The diameter, in inches, of the majority of the line is listed here.

6.3.3. Flow Diagram (P&ID)

This field lists the flow diagram(s) on which the line is found.

6.3.4. Susceptibility Category (Sus. Cat.)

The susceptibility category is listed in this field. Table 6.1 defines the three susceptibility categories.

Table 6.1 Susceptibility Categories

Abbreviation	Category
M	CHECWORKS **M**odeled
S	**S**usceptible non-modeled (SNM)
E	**E**xcluded from the FAC program (non-susceptible)

6.3.5. Model Exclusion Criteria (Mod. Ex. Crit.)

This field appears only for SNM lines. It contains the reason each SNM line is not modeled in CHECWORKS (see Table 5.2).

6.3.6. Susceptibility Exclusion Criteria (FAC Ex. Crit.)

This field appears only for excluded lines. It contains the reason each excluded line is non-susceptible to FAC (see Table 5.1).

6.3.7. Comments

Pertinent information about the line appears in this field.

6.3.8. Reference

References used in determining susceptibility or modelability appear in this field.

6.3.9. Line Description

This field contains a description of the line.

6.4. Color-Coded Flow Diagrams

Flow diagrams of all FAC susceptible systems addressed in this document are included in the Color-Coded Flow Diagrams. The flow diagrams are color-coded based upon FAC susceptibility category and labeled to indicate line numbers. Line numbers were added to the flow diagrams. See the Color-Coded Flow Diagrams Document 0700.104-19 for the color-code convention.

6.5. Revision History

Changes made for each revision of this report are documented in Appendix D.

6.6. Industry FAC Experience Table

Attachment A contains a table of important industry FAC events. This table was used as an aide in determining FAC susceptibility.

6.7. FAC-Susceptible Lines Containing Orifices

As a subtask of the project, a list of FAC-susceptible lines containing orifices was gathered and is shown in Table 6.2 below.

Table 6.2 FAC Susceptible Lines Containing Orifices

Line Number	Line Description	P&ID	Coord.
3-AS-001	Aux Steam to RS-UH-1	9321-F-41443	E2
3-AS-003	Aux Steam to RS-HC-2	9321-F-41443	D5
3-AS-004	Aux Steam to RS-HC-4	9321-F-41443	D5
3-AS-005	Aux Steam to RS-HC-1	9321-F-41443	C5
3-AS-006	Aux Steam to RS-HX-1	9321-F-41443	D3
3-AS-007	Aux Steam to RS-HC-3	9321-F-41443	E5
3-AST-104	Aux Steam to and from AST-10	9321-F-27273	D6
3-AST-122	Aux Steam thru AST-12 to Cond Receiver	9321-F-27273	F4
3-AST-133	Aux Steam thru AST-21 to Cond Receiver	9321-F-27273	F5
3-AST-134	Aux Steam thru AST-20 to Cond Receiver	9321-F-27273	E4
3-AST-138	Aux Steam thru AST-13	9321-F-27273	D5
3-AST-139	Aux Steam thru AST-14	9321-F-27273	D5
3-AST-140	Aux Steam thru AST-15	9321-F-27273	D4
3-AST-141	Aux Steam thru AST-16	9321-F-27273	D4
3-AST-142	Aux Steam thru AST-17	9321-F-27273	D3
3-BD-048	Blowdown Tank vent to Atmosphere	9321-F-27293	F1
3-BD-055	SG Blowdown from Orifice upstream of Heat Exchanger #4 (A and B)	9321-F-24063	H6
3-BD-070	SG Blowdown to SGBDIX-1	9321-F-24063	E4
3-BD-085	SG Blowdown to SGBDIX-2 downstream of SGBDIX-1 drain	9321-F-24063	D5
3-BD-086	SG Blowdown to SGBDIX-3 downstream of SGBDIX-1 and SGBDIX-2 drain	9321-F-24063	C5
3-CD-007	Condensate to Steam Generator Blowdown HE #3	9321-F-20183 Sheet 2	D2
3-CD-032	Condensate from Header to BFP No. 31	9321-F-20183 Sheet 2	B4
3-CD-033	Condensate from Header to BFP No. 32	9321-F-20183 Sheet 2	B4
3-HD-001	#31 HDP to Heater Drain Pump Header	9321-F-20223 Sheet 1	C4

Line Number	Line Description	P&ID	Coord.
3-HD-002	#32 HDP to Heater Drain Pump Header	9321-F-20223 Sheet 1	C5
3-MS-149	Main Steam Stop Valve drain to 33 Cond.	9321-F-20173	A5
3-MS-150	Main Steam Stop Valve drain to 33 Cond.	9321-F-20173	B5
3-MS-151	Header to 33 Cond.	9321-F-20173	A4
3-MSD-013	Reheater Drain Tank 31A Drain to Header	9321-F-20233 Sheet 1	C3
3-MSD-014	Reheater Drain Tank 32A Drain to Header	9321-F-20233 Sheet 1	C6
3-MSD-015	Reheater Drain Tank 33A Drain to Header	9321-F-20233 Sheet 1	D6
3-MSD-022	Reheater Drain Tank 31B Drain to Header	9321-F-20233 Sheet 2	F2
3-MSD-023	Reheater Drain Tank 32B Drain to Header	9321-F-20233 Sheet 2	D3
3-MSD-024	Reheater Drain Tank 33B Drain to Header	9321-F-20233 Sheet 2	D2
3-MSD-088	MS Drain Tank 31B Drain to Heater Drain Tank	9321-F-20233 Sheet 2	E8
3-MSD-089	MS Drain Tank 32B Drain to Heater Drain Tank	9321-F-20233 Sheet 2	E8
3-MSD-090	MS Drain Tank 33B Drain to Heater Drain Tank	9321-F-20233 Sheet 2	E8
3-PD-032	Moisture Preseparator 1B to Separation Chamber header	9321-F-20223 Sheet 1	H4
3-PD-033	Moisture Preseparator 1A to Separation Chamber header	9321-F-20223 Sheet 1	H4
3-PD-034	Moisture Preseparator 2B to Separation Chamber header	9321-F-20223 Sheet 1	H5
3-PD-035	Moisture Preseparator 2A to Separation Chamber header	9321-F-20223 Sheet 1	H6
3-SBF-006	Service Boiler Feed Pump 31 Low Flow Recirc line	9321-F-41293	F4
3-SBF-007	Service Boiler Feed Pump 32 Low Flow Recirc line	9321-F-41293	F3
3-UH-001	Aux Steam to Air Purge Heating Coils	9321-F-40573	E6
3-UH-220	Condensate Transfer Pump 31 Low Flow Recirc line	9321-F-41293	B2
3-UH-221	Condensate Transfer Pump 32 Low Flow Recirc line	9321-F-41293	C3
3-UHT-018	Aux Steam from RS-UH-1 thru steam trap UH-T-397 to Cond Receiver header	9321-F-41443	G6
3-UHT-019	Aux Steam from RS-HC-2 thru steam trap UH-T-409-2 to Cond Receiver header	9321-F-41443	G8
3-UHT-020	Aux Steam from RS-HC-4 thru steam trap UH-T-409-4 to Cond Receiver header	9321-F-41443	F8
3-UHT-021-A	Aux Steam from RS-HC-3 thru steam trap UH-T-409-3 to Cond Receiver header	9321-F-41443	D8
3-UHT-022-A	Aux Steam from RS-HC-1 thru steam trap UH-T-409-1 to Cond Receiver header	9321-F-41443	C8
3-UHT-023-A	Aux Steam from RS-HX-1 thru steam trap UH-T-408-3 to Cond Receiver header	9321-F-41443	B8
3-UHT-228	Main Steam leak thru Steam Trap UH-T-11 to House Service Boiler Condensate Return Tank	9321-F-41283	B4

7. References

7.1. "Erosion/Corrosion-Induced Pipe Wall Thinning", Generic Letter 89-08, U.S. Nuclear Regulatory Commission (NRC), May 2, 1989.

7.2. "Recommendations for an Effective Flow-Accelerated Corrosion Program," EPRI NSAC 202L-R3, 1011838, May 2006.

7.3. Indian Point Piping and Instrumentation Diagrams.

System (Drawing Title)	P&ID #	Rev #
Flow Diagram Symbols	9321-D-20163	6
Main Steam System	9321-F-20173	70
Condensate and Boiler Feed Pump System	9321-F-20183 Sheet 1	60
Condensate and Boiler Feed Pump System	9321-F-20183 Sheet 2	25
Boiler Feedwater System	9321-F-20193	57
Extraction Steam System	9321-F-20203 Sheet 1	7
Extraction Steam System	9321-F-20203 Sheet 2	27
Heater Vents and Drains	9321-F-20223 Sheet 1	34
Heater Vents and Drains	9321-F-20223 Sheet 2	9
Moisture Separator/Reheater Vents and Drains	9321-F-20233 Sheet 1	25
Moisture Separator/Reheater Vents and Drains	9321-F-20233 Sheet 2	13
Boiler Feed Pump Vents and Drains	9321-F-20243	15
Extraction Steam Traps	9321-F-20313	19
Main Steam Traps	9321-F-20413	25
Main Steam Traps	9321-F-20423	12
Steam Generator Blowdown Recovery System	9321-F-24063	11
Auxiliary Steam System	9321-F-27273	28
Steam Generator Blowdown	9321-F-27293	32
Auxiliary Steam Supply System	9321-F-40573	27
Auxiliary Steam Supply System	9321-F-41283	13
Auxiliary Steam Supply System	9321-F-41293	11
Auxiliary Steam System	9321-F-41443	5
Auxiliary Steam System	9321-F-41553	3
Auxiliary Steam System	9321-F-41563	3
Auxiliary Boiler/Reboiler Steam System	9321-F-41573	4
Gland Steam System	B237144-4	
Gland Steam System	9321-05-FP-2355	

7.4. Indian Point System Descriptions.

System Name	SD No.
Steam Generators	1.2
Main and Reheat Steam	18.0
High Pressure and Low Pressure Steam Dumps	18.1
Extraction Steam Vents and Drains	19.0
Condensate	20.0
Main Feedwater	21.0
Steam Generator Water Level Control	21.1
Main Turbine & Generator Support Systems	26.1
Auxiliary Steam System	29.1
House Service Boiler	29.11

7.5. Electronic correspondence between CSI and Indian Point personnel (see Attachment B).

7.5.1. Email from Chris Pott (CSI) to Ian Mew(IPEC) regarding information requests, dated 10/2/2009.

7.5.2. Conversation between Ian Mew (IPEC) and Chris Pott (CSI) regarding responses to information requests, dated 11/5/2009.

7.5.3. Conversation between Ian Mew (IPEC) and Chris Pott (CSI) regarding a missing P&ID, dated 11/17/2009.

7.6. EPRI, Flow-Accelerated Corrosion in Power Plants, B. Chexal et al, EPRI TR-106611-R1, 1998.

7.7. Indian Point Unit 3 Nuclear Power Plant, “Specification for Pipe, Tube, Fittings, & Fabrication of Piping and Tubing Assemblies”. Specification No. TS-MS-024, Rev 2.

7.8. Indian Point Isometric Drawings for FAC-susceptible piping, received by CSI on 4/3/2009.

7.9. Indian Point “New HPT, Tuned to TR-05097, 0.1% Moist High Pressure Turbine Expansion”, Run Date 1/18/07.

7.10. “CHECWORKS Steam/Feedwater Application Guidelines for Plant Modeling and Evaluation of Component Inspection Data”. EPRI, Palo Alto, CA and CSI Technologies, Inc., Elgin, IL: 2009. 1019176 (For information only).

7.11. Indian Point FAC Program History Outage Reports, transmitted to CSI on 7/15/2009. (For information only).

7.12. Indian Point Unit 3 Nuclear Power Plant, “Flow Accelerated Corrosion Susceptibility Review and Small-Bore & Augmented Monitoring Program”. Engineering Report No. IP3-RPT-MULT-03162, Rev 3 (For information only).

7.13. CHUG Industry Experience Documents (see Attachment A) (For information only).

Appendix A

System Susceptibility Evaluation Report

System Code	System Name	System Number	Susceptible?	Excl. Crit.	Comments	Reference
AS	Auxiliary Steam		Yes		This system generates and distributes steam to the various auxiliaries requiring steam for operation.	
AST	Auxiliary Steam Traps		Yes		This system consists of piping to and from steam traps associated with the Auxiliary Steam System	P&ID
BD	Steam Generator Blowdown		Yes		This system takes water from the steam generators for maintaining proper Steam Generator Chemistry. Also contains lines tagged as BDR.	P&ID
CD	Condensate Pump Discharge		Yes		This system includes piping from some high temperature Feedwater Heaters.	TS-MS-024
CT	Condensate Storage & Transfer		Yes		Condensate transfer is used to ensure there is no raw water contamination of the condensate.	TS-MS-024 Addendum D
EST	Extraction Steam Traps		Yes		This system consists of piping to and from steam traps associated with the Extraction Steam System	P&ID
EX	Extraction Steam		Yes		This system includes extraction steam to the Feedwater Heaters	TS-MS-024 and Addendums
FW	Main Feed Water		Yes		This system supplies feedwater to the steam generators.	TS-MS-024
GS	Gland Sealing Steam		Yes		This system supplies sealing steam to the HP, LP, and BFP Turbines.	P&ID
GST	Gland Steam Traps		Yes		This system consists of piping to and from steam traps associated with the Gland Steam System	P&ID

System Code	System Name	System Number	Susceptible?	Excl. Crit.	Comments	Reference
HD	Heater Drains & Vents		Yes		This system includes Feedwater Heater Drains and Vents, and piping from the Heater Drain Pumps to the Boiler Feed Pump suction.	P&ID
MS	Main Steam		Yes		This system supplies steam to the HP and BFP Turbines and the MSRs.	TS-MS-024
MSD	Moisture Separator Reheater Drains		Yes		This system includes MSR Drains to the Heater Drain Tank, No. 35 Feedwater Heaters, and the Drains Collecting Tank	P&ID
MST	Main Steam Traps		Yes		This system consists of piping to and from steam traps associated with the Main Steam System	P&ID
PD	Moisture Preseparator Drains		Yes		This system removes moisture from piping upstream of the HP Turbine Crossunder Piping.	P&ID
RST	Reheat Steam Traps		Yes		This system consists of piping to and from steam traps associated with the Reheat Steam System	P&ID
SB	Service Boiler		Yes		This system contains some steam piping from the Service Boiler.	TS-MS-024
SBF	Service Boiler Feed Pump		Yes		This system transfers water from the Deaerator to the Steam Drum	TS-MS-024
UH	Condensate Return Unit Heaters to Service Boiler D		Yes		This system contains condensate from the condensate return unit heaters to the service boiler deaerator.	System Description 29.1
UHT	Condensate Return Unit Heater Steam Traps		Yes		This system includes all steam trap lines for the Condensate Return Unit Heaters to Service Boiler Deaerator system.	P&ID
VCD	MSR Vent Chamber Discharge		Yes		This system contains steam from the MSRs.	TS-MS-024

System Code	System Name	System Number	Susceptible?	Excl. Crit.	Comments	Reference
A	4160 VAC		No	EP	This is an electrical system that does not contain piping.	
AAC	AAC EDG Controls & Excitation		No	EP	This system does not contain piping.	
AAC	Alternate AC Diesel Generator		No	EP	This system contains only the generator and not the associated piping.	
AB	Auxiliary Building		No	EP	This system includes the building and not the associated piping.	
ABS	Auxiliary Building Sump		No	ET	This system handles low temperature water from floor drains.	
ABV	Auxiliary Building Ventilations		No	EW	This system vents non-condensable gases.	
AC	Chill Water System		No	ET	This system operates at under 200 degF	
ACW	Auxiliary Cooling Water		No	ET	This system operates at under 200 degF	
ADM	Admin Building		No	EP	This system includes the building and not the associated piping.	
ARMS	Area Radiation Monitoring Systems		No	EP	This system does not contain piping.	
B	480 VAC		No	EP	This is an electrical system that does not contain piping.	
BA	Breathing Air		No	EW	This system does not contain water or steam.	
BMS	Boron Management		No	EW	This system does not contain water or steam.	

System Code	System Name	System Number	Susceptible?	Excl. Crit.	Comments	Reference
BS	Containment (Building) Spray		No	EI	Containment spray only operates in emergency situations.	
CA	Secondary Chemical Addition		No	EW	This system does not contain water or steam.	
CCW	Component Cooling Water System		No	ET	This system provides low-temperature water to various equipment in the plant.	TS-MS-024 Addendum D
CEDM	Control Element Drive Mechanism Control		No	EP	This system does not contain piping.	
CF	Chemical Feed		No	EW	This system does not contain water or steam.	P&ID
CL	Chlorination		No	EW	This system does not contain water or steam.	P&ID
COMM	Communications		No	EP	This system does not contain piping.	
CP	Cathodic Protection		No	EP	This is an electrical system that does not contain piping.	
CPC	Core Protection Calculators		No	EP	This system does not contain piping.	
CPV	Penetration Room Ventilation		No	EW	This system vents non-condensable gases.	
CRDX	Cardox (CO2 Fire Protection System)		No	EW	This system does not contain water or steam.	P&ID
CRV	Control Room Ventilation		No	EW	This system vents non-condensable gases.	
CS	Condensate Pump Suction		No	ET	This system transports low-temperature water from the Condensers to the Condensate Pump.	TS-MS-024
CV	Condenser Air Vents		No	EW	This system does not contain water or steam.	TS-MS-024 Addendum D

System Code	System Name	System Number	Susceptible?	Excl. Crit.	Comments	Reference
CVCS	Chemical and Volume Control System		No	EM	This system is comprised entirely of FAC-resistant piping.	TS-MS-024
CVH	Containment Vent Header		No	EW	This system vents non-condensable gases.	
CW	Circulating Water		No	EO	This system provides river water to cool the steam in the condensers and temperature is below 200 degF.	TS-MS-024 Addendum D
D	125 VDC		No	EP	This is an electrical system that does not contain piping.	
DA	Diesel Generator Starting Air		No	EW	This system does not contain water or steam.	TS-MS-024 Addendum D
DCH	Drain Collection Header		No	EF	Flow in this system is too low to facilitate FAC.	
DF	Diesel Generator Fuel Oil		No	EW	This system does not contain water or steam and temperature is below 200 degF.	TS-MS-024 Addendum D
DFAS	Diverse Emergency Feed Actuation		No	EP	This system does not contain piping.	
DSS	Diverse Scram System		No	EP	This system does not contain piping.	
DW	Domestic Water		No	EO	This system contains highly oxygenated water from the city supply.	
EC	Plant Computer		No	EP	This system does not contain piping.	
EDG	Emergency Diesel Generator		No	EP	This system does not contain piping.	
EDG	EDG Controls & Excitation		No	EP	This system does not contain piping.	

System Code	System Name	System Number	Susceptible?	Excl. Crit.	Comments	Reference
EFW	Emergency Feed Water		No	EI	This system only operates in emergency situations.	
EHC	Electro-Hydraulic (Mechanical)		No	EP	This system does not contain piping.	
EHC	MFP EHC Controls		No	EP	This system does not contain piping.	
EHC	MTG EHC Controls		No	EP	This system does not contain piping.	
EL	Emergency Lighting (Safe Shutdown)		No	EP	This system does not contain piping.	
EOF	Emergency Operations Facility		No	EP	This system does not contain piping.	
ES	ESFAS		No	EP	This system does not contain piping.	
EXCT	Main Generator Excitation & Protection		No	EP	This system does not contain piping.	
F	Switchyard		No	EP	This system does not contain piping.	
FD	Fire Detection		No	EP	This system does not contain piping.	
FHS	Fuel Handling System		No	EW	This system does not contain water or steam.	
FO	Diesel Fuel Oil Storage and Transfer		No	EW	This system does not contain water or steam.	P&ID
FP	Spent Fuel Pool Cooling		No	ET	This system operates at under 200 degF	
FS	Fire Protection (Water)		No	ET	This system uses low-temperature city water with high concentration of O2	P&ID

System Code	System Name	System Number	Susceptible?	Excl. Crit.	Comments	Reference
FWCS	Feed Water Control System		No	EF	This system contains low-flow instrumentation lines.	
GCH	Gas Collection Header		No	EW	This system does not contain water or steam.	
GG	Generator Gas		No	EW	This system does not contain water or steam.	
GSO	Hydrogen Seal Oil (Mechanical)		No	EW	This system does not contain water or steam.	
GZ	Gaseous Radwaste		No	EW	This system does not contain water or steam.	
H	6900 VAC		No	EP	This is an electrical system that does not contain piping.	
H2	Hydrogen		No	EW	This system does not contain water or steam.	
HAL	Halon		No	EW	This system does not contain water or steam.	
HPA	Hydrogen Purge System		No	EW	This system does not contain water or steam.	
HPSI	High Pressure Safety Injection		No	EM	Lines in this system are composed of FAC-resistant material.	Pipe Spec
HR	H2 Recombiners		No	EW	This system does not contain water or steam.	
HS	Generator Hydrogen Supply		No	EW	This system provides hydrogen to the steam generators.	P&ID
HT	Heat Tracking		No	EP	This system does not contain piping.	
IA	Instrument Air		No	EW	This system does not contain water or steam.	TS-MS-024 Addendum F1

System Code	System Name	System Number	Susceptible?	Excl. Crit.	Comments	Reference
IB	Isophase Bus		No	EP	This system does not contain piping.	
IBC	Isophase Bus Cooling		No	ET	This system operates at under 200 degF	
IC	Incore Instrumentation		No	EF	This system contains low-flow instrumentation lines.	
ICC	Reactor Vessel Level Monitoring & CETs		No	EF	This system contains low-flow instrumentation lines.	
IS	Intake Structure		No	EO	This system contains highly oxygenated water.	
JW	Diesel Generator Jacket Water		No	EO	This system is fed with raw water with high O2 content and does not exceed 200 degF.	TS-MS-024 Addendum D
K	Annunciators		No	EP	This system does not contain piping.	
LA	120/208 VAC Misc. Lighting & Power Dist.		No	EP	This is an electrical system that does not contain piping.	
LLRW	Low Level Radwaste Bldg		No	EP	This system does not contain piping.	
LO	Main Turbine Lube Oil		No	EW	This system does not contain water or steam.	P&ID
LPSI	Low Pressure Safety Injection		No	EM	Lines in this system are composed of FAC-resistant material.	Pipe Spec
LRBV	Low Level Radwaste Building Ventilation		No	EW	This system vents non-condensable gases.	
LRW	Liq Radwaste Mgmt		No	EW	This system does not contain water or steam.	
MET	Meteorological Instrumentation		No	EP	This system does not contain piping.	

System Code	System Name	System Number	Susceptible?	Excl. Crit.	Comments	Reference
MW	City Water Make-Up		No	EO	This system contains highly oxygenated water from the city supply and temperature does not exceed 200 degF.	TS-MS-024
N2	Nitrogen		No	EW	This system does not contain water or steam.	P&ID
NI	Nuclear Instrumentation		No	EP	This system does not contain piping.	
NT	Neutralizing System		No	EP	This system does not contain piping.	
PA	Reactor Building Purge Air		No	EW	This system does not contain water or steam.	
PASS	Post Accident Sampling		No	EI	This system only operates in post-accident conditions	
PCA	Penetration Cooling Air		No	EW	This system does not contain water or steam and temperature is below 200 degF.	TS-MS-024 Addendum D
PH	Plant Heating		No	EW	This system does not contain water or steam.	
PMU	Makeup Demineralizer System		No	ET	This system operates at under 200 degF	
PPS	Plant Protection System		No	EP	This system does not contain piping.	
PS	Primary Sampling		No	EI	This system operates less than 2% of plant operation	
PW	Primary Water		No	ET	This system contains low-temperature water and is comprised of FAC-resistant material.	TS-MS-024
RB	Reactor Building		No	EP	This system does not contain piping.	

System Code	System Name	System Number	Susceptible?	Excl. Crit.	Comments	Reference
RBHV	Reactor Building Ventilation		No	EW	This system vents non-condensable gases.	
RCP	Reactor Coolant Pumps		No	EP	This system does not contain piping.	
RCS	Reactor Coolant System		No	EM	This system is comprised entirely of FAC-resistant piping.	TS-MS-024
RDAC/SPING	RDAC (Radiation Dose Assessment Computer)/SPING (S		No	EP	This system does not contain piping.	
RHR	Residual Heat Removal System		No	EM	All lines in the RHR system are stainless steel.	
RMS	Radiation Monitoring		No	EP	This system does not contain piping.	
RPS	Reactor Protection System		No	EP	This system does not contain piping.	
RRS	Reactor Regulating System		No	EP	This system does not contain piping.	
RS	Reheat Steam		No	EQ	Reheater Steam provides superheated steam to the LP and BFP Turbines.	TS-MS-024
RT	Resin Transfer		No	EW	This system does not contain water or steam.	
RWB	Radwaste Building		No	EP	This system does not contain piping.	
RX	Reactor Core		No	EP	This system does not contain piping.	
RZ	Regen Waste		No	EP	This system does not contain piping.	
SA	Service Air		No	EW	This system does not contain water or steam and temperature is below 200 degF.	TS-MS-024

System Code	System Name	System Number	Susceptible?	Excl. Crit.	Comments	Reference
SDBC	Steam Dump Bypass Control System		No	EP	This system does not contain piping.	
SDC	Shutdown Cooling		No	EI	This system only operates during shutdown.	
SEC	Security		No	EP	This system does not contain piping.	
SFP	Spent Fuel Pit		No	ET	The water in this system is low-temperature.	
SGS	Stm. Gen. Secondary		No	EP	This system does not contain piping.	
SI	Safety Injection System		No	EM	This system is comprised entirely of FAC-resistant piping.	TS-MS-024
SMS	Seismic Monitoring System		No	EP	This system does not contain piping.	
SP	Sample System		No	EM	Sample piping at IPEC is stainless steel.	TS-MS-024
SPDS	Safety Parameter Display System		No	EP	This system does not contain piping.	
SS	Secondary Sampling		No	EM	Sample piping at IPEC is stainless steel.	Pipe Spec
STP	Sewage Treatment Plant		No	EP	This system does not contain piping.	
SW	Service Water		No	EO	Service Water has a high concentration of dissolved oxygen.	P&ID
SWC	Stator Water Cooling		No	ET	This system operates at under 200 degF	
SZ	Solid Waste Management		No	EW	This system does not contain water or steam.	

System Code	System Name	System Number	Susceptible?	Excl. Crit.	Comments	Reference
TB	Turbine Building		No	EP	This system does not contain piping.	
TBS	Turbine Building Sump		No	EF	Flow in this system is too low to facilitate FAC.	
TBV	Turbine Building Ventilation		No	EW	This system vents non-condensable gases.	
TG	Main Turbine & Generator		No	EP	This system does not contain piping.	
TG	MTG & MFPT Supervisory Instrumentation		No	EP	This system does not contain piping.	
TS	Traveling Screens		No	EP	This system does not contain piping.	
VENT	Miscellaneous Ventilation System		No	EW	This system vents non-condensable gases.	
VLPM	U3 Vibration & Loose Parts Monitoring System		No	EP	This system does not contain piping.	
VS	Condenser Vacuum		No	EW	This system vents non-condensable gases.	
WCP	Weld Channel Pressurization		No	EW	This system does not contain water or steam.	P&ID
XFMR	Main, Auxiliary & Startup Transformers		No	EP	This system does not contain piping.	
Y	Inverters & Vital 120 VAC		No	EP	This is an electrical system that does not contain piping.	

System Code	System Name	System Number	Susceptible?	Excl. Crit.	Comments	Reference

Exclusion Criteria Legend:

EC	Excluded due to Combination of infrequent op above temp threshold
EF	Excluded due to low or no Flow
EI	Excluded due to Infrequent operation
EM	Excluded due to FAC-resistant Material
EO	Excluded due to high dissolved Oxygen content
EP	Exluded, does not contain Piping
EQ	Excluded due to high steam Quality
ER	Excluded, Removed from service and "cut" and "capped"
ET	Excluded due to operating Temperature (single phase, < 200 deg F)
EW	Excluded because system, subsytem, or line is non-Water

Appendix B

Subsystem Susceptibility Evaluation Report

Indian Point Unit 3

Auxiliary Steam (AS), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-AS-01	Auxiliary Steam to RS-HC-1 thru 4, RS-UH-1, and RS-HX-1		9321-F-41443, 9321-F-27273	Yes			P&ID

Auxiliary Steam Traps (AST), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-AST-01	Auxiliary Steam Trap lines		9321-F-4573	Yes			P&ID

Steam Generator Blowdown (BD), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-BD-01	Steam Generator Blowdown to Blowdown Tank and Sample Cooler		9321-F-27293 Sheet 1, 9321-F-24063, 9321-F-20183 Sheet 1	Yes			P&ID
3-BD-02	Steam Generator Blowdown from Sample Cooler to Steam Generator Blowdown Flash Tank No 31		9321-F-27293 Sheet 1	No	EM	Sample lines are all SS	TS-MS-024

Condensate Pump Discharge (CD), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-CD-01	Condensate Lines Between Condensate Pumps and #32 Feedwater Heaters		9321-F-20183	No	ET	Condensate is below 200 degF before passing through the #32 FWHs	PEPSE
3-CD-02	Condensate Lines Downstream of #32 Feedwater Heaters		9321-F-20183 Sheet 1 and 2, 9321-F-20193	Yes			PEPSE

Condensate Storage & Transfer (CT), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-CT-01	Lines from the Boiler Feed Pump Turbine Drip Tank to the Drip Tank Drain Pumps		9321-F-20243	Yes			Pipe Spec
3-CT-02	All other Condensate Transfer lines		Multiple P&IDs	No	ET	This system operates at below 200 degF	TS-MS-024 Addendum D

Extraction Steam Traps (EST), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-3EST-01	LP Turbine Extraction Steam to #33 FWHs Steam Traps		9321-F-20313	Yes			P&ID
3-4EST-01	Extraction Steam Lines upstream of Steam Traps		9321-F-20313	No	EQ	Steam is superheated upstream of the steam traps.	P&IDs
3-4EST-02	Steam Traps to the Steam Trap Drains Header from Extraction lines to #34 FWHs		9321-F-20313	Yes			PEPSE
3-5EST-01	Extraction Steam to #35 FWHs Steam Traps		9321-F-20203 Sheet 1, 9321-F-20313	Yes			P&ID
3-6EST-01	HP Turbine Extraction Steam to Extraction Steam Traps		9321-F-20313	Yes			P&ID
3-6EST-02	Extraction Steam Trap Drain Headers to the Drains Collecting Tank		9321-F-20313	Yes			P&ID

Extraction Steam (EX), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-1EX-01	LP Turbine Extraction Steam to #31 Feedwater Heaters		9321-F-20203	Yes			PEPSE
3-2EX-01	LP Turbine Extraction Steam to #32 Feedwater Heaters		9321-F-20203	Yes			PEPSE
3-3EX-01	LP Turbine Extraction Steam to #33 Feedwater Heaters		9321-F-20203, 9321-F-20313	Yes			PEPSE
3-3EX-02	Boiler Feed Pump Turbine Drains to Condensers		9321-F-20173, 9321-F-20243	Yes			PEPSE
3-4EX-01	Extraction Steam Lines to #34 Feedwater Heaters		9321-F-20203, 9321-F-20313	No	EQ	Steam is superheated.	P&IDs
3-5EX-01	HP Turbine Crossunder Piping Leakoff Drains to Condensers		9321-F-20203	Yes			PEPSE
3-5EX-02	Extraction Steam from Moisture Preseparators to #35 Feedwater Heaters		9321-F-20203, 9321-F-20313	Yes			PEPSE
3-5EX-03	Small Bore Steam Drains to the Condenser via FCV-1156, 1164, 1165, and 1166.		9321-F-20203	No	EI	Control valves in these lines are normally closed.	P&IDs

Extraction Steam (EX), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-6EX-01	HP Turbine Extraction Steam to #36 Feedwater Heaters		9321-F-20203, 9321-F-20313	Yes			PEPSE

Main Feed Water (FW), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-FW-01	Feedwater Lines from the Boiler Feed Pumps to the Steam Generators		9321-F-20193	Yes			PEPSE
3-FW-02	Auxiliary Feedwater Lines to Steam Generator		9321-F-20193	No	EI	Auxiliary Feedwater only operates during startup, shutdown, and emergency conditions.	TS-MS-024
3-FW-03	Boiler Feed Pump Recirc Lines to the Drains Collecting Tank		9321-F-20193	No	EM	All lines in this subsystem have been replaced with CrMo.	SFA Model

Gland Sealing Steam (GS), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-GS-01	Gland Steam to and from HP, LP, and BFP Turbines		9321-F-20243, 9321-F-20313, 9321-05-FP-2355, B237144	Yes			PEPSE

Gland Steam Traps (GST), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-GST-01	Gland Steam to and from Steam Traps		9321-F-20243	Yes			PEPSE

Heater Drains & Vents (HD), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-1HD-01	#31 Feedwater Heater Drain Lines		9321-F-20223 Sheet 2	Yes			PEPSE
3-1HD-02	#31 Feedwater Heater Vents		9321-F-20223 Sheet 2	Yes			P&ID
3-2HD-01	#32 Feedwater Heater Drain Lines		9321-F-20223 Sheet 2	Yes			PEPSE
3-2HD-02	#32 Feedwater Heater Vents		9321-F-20223 Sheet 2	Yes			P&ID
3-3HD-01	#33 Feedwater Heater Drain Lines		9321-F-20223 Sheet 2	Yes			PEPSE
3-3HD-02	#33 Feedwater Heater Vents		9321-F-20223 Sheet 2	No	EM	All lines in this subsystem have been replaced with CrMo.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-4HD-01	#34 Feedwater Heater Drain Lines		9321-F-20223 Sheet 2	Yes			PEPSE
3-4HD-02	#34 Feedwater Heater Vents		9321-F-20223 Sheet 2	Yes			P&ID
3-5HD-01	Heater Drains from #35 Feedwater Heaters		9321-F-20223 Sheet 1	Yes			PEPSE
3-5HD-02	Heater Vents from #35 Feedwater Heater and Heater Drain Tank vents to #35 Feedwater Heaters and Flas		9321-F-20223 Sheet 1 and 2	Yes			PEPSE

Heater Drains & Vents (HD), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-5HD-03	HDT Drains to Heater Drain Pumps and Condensers and Heater Drain Pump Vents to HDT		9321-F-20223 Sheet 1 and 2	Yes			PEPSE
3-6HD-01	Heater Drains from #36 Feedwater Heaters		9321-F-20223 Sheet 1 and 2	Yes			PEPSE
3-6HD-02	Heater Vents from #36 Feedwater Heater		9321-F-20223 Sheet 1, 9321-F-20313	Yes			PEPSE
3-HD-01	Heater Drain Pump discharge to Boiler Feed Pumps		9321-F-20223, 9321-F-20183 Sheet 2	Yes			PEPSE

Main Steam (MS), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-MS-01	Main Steam from SG to HP Turbine, BFP Turbine, MSRs, Aux. Steam, SJAEs, and Priming Ejectors.		9321-F-20173, 9321-F-20233 Sheet 1 and 2, 9321-F-20413, 9321-F-20423, 9321-F-41573, 9321-F-41283	Yes			PEPSE
3-MS-02	Main Steam to MSR Header Dumps to Condenser		9321-F-20173	No	EI	Infrequent use - normally closed valve shown on P&ID	P&ID
3-MS-03	Main Steam to Auxiliary FW Turbine		9321-F-20173	No	EI	Infrequent use - normally closed valve shown on P&ID	P&ID
3-MS-04	Turbine Steam Drains via PCV-1134, 1135, 1136, and 1137		9321-F-20173	No	EI	Control valves in these lines are normally closed.	P&ID
3-MS-05	Drains from Main Steam to Swap Lab		9321-F-20173	No	EI	Control valves in these lines are normally closed.	P&ID
3-MS-06	Small Bore Turbine Steam Drains to the Condenser via FCV-1154, 1155, 1157, 1158, and 1159		9321-F-20173	No	EI	Control valves in these lines are normally closed.	IP3-RPT-Mult-03162
3-MS-07	H.P. Cylinder Steam Heating and Seals		9321-F-20173	No	EI	Control valves in line are closed during normal operation.	SD No. 18.0
3-MS-08	Main Steam Supply to Gland Steam Header		9321-F-20173, 9321-F-20313, 9321-F-20243	Yes			P&ID
3-MS-09	H.P. Turbine Control Valve Piping		9321-05-FP-2355	Yes			P&ID

Main Steam (MS), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-MS-10	HP Turbine Crossunder Piping to MSRs and condensers		9321-F-20203	Yes			PEPSE
3-MS-11	Scavenging Steam from 6th Stage Extraction Steam		9321-F-20233 Sheet 1 and 2	No	ER	Source line shown capped on P&ID	P&ID

Moisture Separator Reheater Drains (MSD), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-MSD-01	Moisture Separator Drains to the Heater Drain Tank		9321-F-20233 Sheet 1 and 2	Yes			PEPSE
3-MSD-02	Reheater Drains to #36 Feedwater Heaters		9321-F-20233 Sheet 1 and 2	Yes			PEPSE

Main Steam Traps (MST), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-MST-01	Main Steam lines surrounding Main Steam Traps		9321-F-41573	Yes			P&ID

Moisture Preseparator Drains (PD), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-PD-01	Moisture Preseparator Lines		9321-F-20223 Sheet 1	Yes			PEPSE

Reheat Steam Traps (RST), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-RST-01	Reheat Steam lines upstream of Steam Traps		9321-F-20243	No	EQ	Reheat Steam is superheated upstream of the Steam Traps	PEPSE
3-RST-02	Reheat Steam from Steam Traps to Boiler Feed Pump Turbine Drip Tank		9321-F-20243	Yes			PEPSE

Service Boiler (SB), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-SB-01	Auxiliary Steam lines to and from the Reboiler		9321-F-41573	No	ER	The Reboiler has been removed from service	SD No. 18.0, IP3-RPT-MULT-03162
3-SB-02	Service Boiler Lines		9321-F-41573, 9321-F-40573, 9321-F-20173, 9321-F-41283, 9321-F-41293	Yes			P&IDs

Service Boiler Feed Pump (SBF), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-SBF-01	Service Boiler lines from Deaerator to Steam Drum thru Service Boiler Feed Pumps		9321-F-41293, 9321-F-41283	Yes			P&ID

Condensate Return Unit Heaters to Service Boiler D (UH), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-UH-01	Auxiliary Steam Lines to Various Equipment		9321-F-40573, 9321-F-27273, 9321-F-41443, 9321-F-41553, 9321-F-41293, 9321-F-41283	Yes			P&IDs
3-UH-02	Aux Steam to Radiation Monitor		9321-F-27273, 9321-F-41443	No	ET	Sample is cooled and therefore excluded	P&IDs

Condensate Return Unit Heater Steam Traps (UHT), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-UHT-01	Auxiliary Steam to Steam Traps		9321-F-41553	Yes			P&ID

MSR Vent Chamber Discharge (VCD), Unit 3

Subsystem Number	Subsystem Name	Subsystem Boundary	P&ID No.	FAC Sus?	Excl. Crit.	Comments	Reference
3-VCD-01	Moisture Separator Reheater Vent Chamber Discharge Lines		9321-F-20233 Sheet 1 and 2, 9321-F-20203	Yes			PEPSE

Exclusion Criteria (Excl. Crit.) Legend:

EC	Excluded due to Combination of infrequent op above temp threshold
EF	Excluded due to low or no Flow
EI	Excluded due to Infrequent operation
EM	Excluded due to FAC-resistant Material
EO	Excluded due to high dissolved Oxygen content
EP	Exluded, does not contain Piping
EQ	Excluded due to high steam Quality
ER	Excluded, Removed from service and "cut" and "capped"
ET	Excluded due to operating Temperature (single phase, < 200 deg F)
EW	Excluded because system, subsytem, or line is non-Water

Appendix C

Line Susceptibility Evaluation Report

Indian Point Unit 3

Auxiliary Steam (AS), Unit 3

Section B: SNM Program Lines

3-AS-01: Auxiliary Steam to RS-HC-1 thru 4, RS-UH-1, and RS-HX-1

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-AS-001	1.25	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam to RS-UH-1
3-AS-002	1	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam to PRV Station
3-AS-003	2.5	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam to RS-HC-2
3-AS-004	3	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam to RS-HC-4
3-AS-005	2.5	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam to RS-HC-1
3-AS-006	2	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam to RS-HX-1
3-AS-007	2.5	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam to RS-HC-3
3-AS-024	2.5	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Header to Cond Receiver
3-AS-049	1.5	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Cond Receiver exit through RS Pump 3
3-AS-050	1.5	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Cond Receiver exit through RS Pump 4
3-AS-051	1.5	9321-F-41443, 9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Drain to Condensate Receiver IP3V-138-0001

Section C: Excluded Lines

3-AS-01: Auxiliary Steam to RS-HC-1 thru 4, RS-UH-1, and RS-HX-1

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-AS-026	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Valve TCV 390-1 Bypass
3-AS-028	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Valve TCV 390-3 Bypass
3-AS-031	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Valve TCV 390-5 Bypass

Auxiliary Steam (AS), Unit 3

Section C: Excluded Lines

3-AS-01: Auxiliary Steam to RS-HC-1 thru 4, RS-UH-1, and RS-HX-1

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-AS-033	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Valve TCV 390-4 Bypass
3-AS-039	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Valve TCV 390-2 Bypass
3-AS-041	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Valve PCV 401 Bypass
3-AS-044	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Valve TCV 453 Bypass
3-AS-048	1	9321-F-41443	E	EF	Low to no flow in vent to atmosphere	P&ID	Vent to Atmosphere

Auxiliary Steam Traps (AST), Unit 3

Section B: SNM Program Lines

3-AST-01: Auxiliary Steam Trap lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-AST-002	1.5	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to AST-30
3-AST-010	0.75	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to AST-26
3-AST-011	0.75	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to AST-3
3-AST-012	0.75	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam from AST-26 to Cond Receiver Header
3-AST-013	0.75	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam from AST-3 to Cond Receiver Header
3-AST-104	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from AST-10
3-AST-115	1.5	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam from Primary Water Storage Tank through AST-19
3-AST-122	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru AST-12 to Cond Receiver
3-AST-133	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru AST-21 to Cond Receiver
3-AST-134	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru AST-20 to Cond Receiver
3-AST-137	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru AST-27
3-AST-138	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru AST-13
3-AST-139	0.75	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru AST-14
3-AST-140	0.75	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru AST-15
3-AST-141	0.75	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru AST-16
3-AST-142	0.75	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru AST-17
3-AST-174	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru AST-28

Auxiliary Steam Traps (AST), Unit 3

Section B: SNM Program Lines

3-AST-01: Auxiliary Steam Trap lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-AST-236	2	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Primary Water Storage Tank

Section C: Excluded Lines

3-AST-01: Auxiliary Steam Trap lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-AST-004	0.75	9321-F-40573	E	EI	Valve shown closed on P&ID.	P&ID	AST-30 Bypass
3-AST-014	0.75	9321-F-40573	E	EI	Valve shown closed on P&ID.	P&ID	AST-26 bypass
3-AST-015	0.75	9321-F-40573	E	EI	Valve shown closed on P&ID.	P&ID	AST-3 Bypass
3-AST-105	1	9321-F-27273	E	EI	Valve shown closed on P&ID.	P&ID	AST-10 Bypass
3-AST-123	1	9321-F-27273	E	EI	Valve shown closed on P&ID.	P&ID	AST-12 Bypass
3-AST-135	1	9321-F-27273	E	EI	Valve shown closed on P&ID.	P&ID	AST-21 Bypass
3-AST-136	1	9321-F-27273	E	EI	Valve shown closed on P&ID.	P&ID	AST-20 Bypass
3-AST-143	1	9321-F-27273	E	EI	Valve shown closed on P&ID.	P&ID	AST-13 Bypass
3-AST-144	0.75	9321-F-27273	E	EI	Valve shown closed on P&ID.	P&ID	AST-14 Bypass
3-AST-145	0.75	9321-F-27273	E	EI	Valve shown closed on P&ID.	P&ID	AST-15 Bypass
3-AST-146	0.75	9321-F-27273	E	EI	Valve shown closed on P&ID.	P&ID	AST-16 Bypass
3-AST-147	0.75	9321-F-27273	E	EI	Valve shown closed on P&ID.	P&ID	AST-17 Bypass

Steam Generator Blowdown (BD), Unit 3

Section B: SNM Program Lines

3-BD-01: Steam Generator Blowdown to Blowdown Tank and Sample Cooler

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-BD-001	2.5	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 31 Blowdown via BD-1-2
3-BD-002	2.5	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 31 Blowdown via BD-1-1
3-BD-004	2	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 32 Blowdown via BD-1-4
3-BD-006	2	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 32 Blowdown via BD-1-3
3-BD-008	2	9321-F-27293	S	NS	Small bore piping with unknown conditions.	P&ID	SG 33 Blowdown via BD-1-6
3-BD-010	2	9321-F-27293	S	NS	Small bore piping with unknown conditions.	P&ID	SG 33 Blowdown via BD-1-5
3-BD-011	2.5	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 34 Blowdown via BD-1-8
3-BD-012	2.5	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 34 Blowdown via BD-1-7
3-BD-013	1	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 31 Shell Drain
3-BD-015	1	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 32 Shell Drain
3-BD-017	1	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 33 Shell Drain
3-BD-019	1	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 34 Shell Drain
3-BD-020	4	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 31 Blowdown
3-BD-021	4	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 32 Blowdown
3-BD-022	4	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 33 Blowdown
3-BD-023	4	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 34 Blowdown
3-BD-024	0.5	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 31 Blowdown drain
3-BD-025	0.5	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 32 Blowdown drain
3-BD-026	0.5	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 33 Blowdown drain
3-BD-027	0.5	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 34 Blowdown drain

Steam Generator Blowdown (BD), Unit 3

Section B: SNM Program Lines

3-BD-01: Steam Generator Blowdown to Blowdown Tank and Sample Cooler

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-BD-037	4	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 31 Blowdown to SGB Heat Exchangers
3-BD-038	4	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 32 Blowdown to SGB Heat Exchangers
3-BD-039	4	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 33 Blowdown to SGB Heat Exchangers
3-BD-040	4	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	SG 34 Blowdown to SGB Heat Exchangers
3-BD-045	4	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	Header from SG 34 and SG 33 Blowdown to SGB Heat Exchangers
3-BD-046	4	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	Header from SG 31, 33, and 34 Blowdown to SGB Heat Exchangers
3-BD-047	4	9321-F-27293, 9321-F-24063	S	NC	Operating conditions unknown.	P&ID	Header from SG Blowdown to SGB Heat Exchangers
3-BD-048	18	9321-F-27293	S	NC	Operating conditions unknown.	P&ID	Blowdown Tank vent to Atmosphere
3-BD-052	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	Steam Generator Blowdown upstream of SGB Heat Exchanger #3
3-BD-053	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	Steam Generator Blowdown downstream of SGB Heat Exchanger #3 before Orifice
3-BD-055	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SG Blowdown from Orifice upstream of Heat Exchanger #4 (A and B)
3-BD-056	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SG Blowdown downstream of HE #4 (A and B) to PCV 2
3-BD-058	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SG Blowdown from PCV 2 to Pre-filters
3-BD-063	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SG Blowdown upstream of SGBDF-2

Steam Generator Blowdown (BD), Unit 3

Section B: SNM Program Lines

3-BD-01: Steam Generator Blowdown to Blowdown Tank and Sample Cooler

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-BD-065	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SGBDF-2 to SGBDF-4
3-BD-068	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SGBDF-4 to Ion Exchanger header
3-BD-069	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SG Blowdown header to Ion Exchangers (SGBDIX)
3-BD-070	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SG Blowdown to SGBDIX-1
3-BD-073	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SGBDIX-1 Drain header
3-BD-074	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SGBDIX-2 Drain to Resin Trap
3-BD-075	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SGBDIX-3 Drain to Resin Trap
3-BD-076	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SGBDIX-1 Drain to SGBDIX header
3-BD-077	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SGBDIX-2 Drain to SGBDIX header
3-BD-079	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SGBDIX-1 Drain upstream of SGBDIX-2
3-BD-080	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SGBDIX-1 Drain upstream of SGBDIX-3
3-BD-082	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SGBDIX-2 Drain upstream of SGBDIX-3
3-BD-085	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SG Blowdown to SGBDIX-2 downstream of SGBDIX-1 drain
3-BD-086	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SG Blowdown to SGBDIX-3 downstream of SGBDIX-1 and SGBDIX-2 drain
3-BD-088	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SGBDIX-2 Resin Trap to Post Filter header
3-BD-089	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SGBDIX-3 Resin Trap to Post Filter header

Steam Generator Blowdown (BD), Unit 3

Section B: SNM Program Lines

3-BD-01: Steam Generator Blowdown to Blowdown Tank and Sample Cooler

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-BD-096	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SGBDIX-2 and 3 header to Post Filters
3-BD-097	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SGBDIX header to Post Filters
3-BD-100	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SG Blowdown to SGBDIX-5
3-BD-101	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SG Blowdown to SGBDIX-6
3-BD-102	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SGBDIX-5 header to Drain Collecting Tank
3-BD-103	4	9321-F-24063	S	NC	Operating conditions unknown.	P&ID	SGBDIX-6 header to Drain Collecting Tank
3-BD-104	4	9321-F-24063, 9321-F-20183 Sheet 1	S	NC	Operating conditions unknown.	P&ID	SG Blowdown to Drain Collecting Tank

Section C: Excluded Lines

3-BD-01: Steam Generator Blowdown to Blowdown Tank and Sample Cooler

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-BD-003	2.5	9321-F-27293	E	EM	Stainless Steel Piping	P&ID	SG 32 Blowdown via BD-1-4
3-BD-005	2.5	9321-F-27293	E	EM	Stainless Steel Piping	P&ID	SG 32 Blowdown via BD-1-3
3-BD-007	2.5	9321-F-27293	E	EM	Stainless Steel Piping	P&ID	SG 33 Blowdown via BD-1-6
3-BD-009	2.5	9321-F-27293	E	EM	Stainless Steel Piping	P&ID	SG 33 Blowdown via BD-1-5
3-BD-014	1	9321-F-27293	E	EM	Stainless Steel Piping	P&ID	SG 32 Shell Drain
3-BD-016	1	9321-F-27293	E	EM	Stainless Steel Piping	P&ID	SG 33 Shell Drain
3-BD-018	1	9321-F-27293	E	EM	Stainless Steel Piping	P&ID	SG 34 Shell Drain

Steam Generator Blowdown (BD), Unit 3

Section C: Excluded Lines

3-BD-01: Steam Generator Blowdown to Blowdown Tank and Sample Cooler

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-BD-028	4	9321-F-27293	E	EI	Valve shown closed on P&ID.	P&ID	SG 31 Blowdown to SGB Flash Tank No 31
3-BD-029	4	9321-F-27293	E	EI	Valve shown closed on P&ID.	P&ID	SG 32 Blowdown to SGB Flash Tank No 31
3-BD-030	4	9321-F-27293	E	EI	Valve shown closed on P&ID.	P&ID	SG 33 Blowdown to SGB Flash Tank No 31
3-BD-031	4	9321-F-27293	E	EI	Valve shown closed on P&ID.	P&ID	SG 34 Blowdown to SGB Flash Tank No 31
3-BD-032	2	9321-F-27293	E	EI	Valve shown closed on P&ID.	P&ID	SG 31 Blowdown to Liquid Waste System
3-BD-033	2	9321-F-27293	E	EI	Valve shown closed on P&ID.	P&ID	SG 32 Blowdown to Liquid Waste System
3-BD-034	2	9321-F-27293	E	EI	Valve shown closed on P&ID.	P&ID	SG 33 Blowdown to Liquid Waste System
3-BD-035	2	9321-F-27293	E	EI	Valve shown closed on P&ID.	P&ID	SG 34 Blowdown to Liquid Waste System
3-BD-036	3	9321-F-27293	E	EI	Valve shown closed on P&ID.	P&ID	SG Blowdown header to Liquid Waste System
3-BD-041	4	9321-F-27293	E	EI	Valve shown closed on P&ID.	P&ID	SG 31 Blowdown HCV-1 Bypass
3-BD-042	4	9321-F-27293	E	EI	Valve shown closed on P&ID.	P&ID	SG 32 Blowdown HCV-2 Bypass
3-BD-043	4	9321-F-27293	E	EI	Valve shown closed on P&ID.	P&ID	SG 33 Blowdown HCV-3 Bypass
3-BD-044	4	9321-F-27293	E	EI	Valve shown closed on P&ID.	P&ID	SG 34Blowdown HCV-4 Bypass
3-BD-049	0.38	9321-F-27293	E	EM	Sample lines are SS	TS-MS-024	Line to Sample Cooler from Blowdown Tank Vent via BD-220
3-BD-050	2	9321-F-27293	E	EI	Valve shown closed on P&ID.	P&ID	Steam Generator Blowdown Flash Tank drain

Steam Generator Blowdown (BD), Unit 3

Section C: Excluded Lines

3-BD-01: Steam Generator Blowdown to Blowdown Tank and Sample Cooler

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-BD-051	4	9321-F-27293, 9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	Blowdown drain to SW drain
3-BD-054	4	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SG Blowdown HE #3 Bypass
3-BD-057	4	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SG Blowdown HE #4 (A and B) Bypass
3-BD-059	4	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	PCV 2 Bypass line
3-BD-060	4	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SG Blowdown Pre-filter and Ion Exchanger Bypass
3-BD-061	2	9321-F-24063	E	EF	Low to no flow in vent to atmosphere	P&ID	SG Blowdown Relief Valve to Atmosphere
3-BD-062	4	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SG Blowdown upstream of SGBDF-1
3-BD-064	4	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SGBDF-1 to SGBDF-3
3-BD-066	4	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SGBDF Balance Line
3-BD-067	4	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SGBDF-3 to Ion Exchanger header
3-BD-071	4	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SG Blowdown to SGBDIX-2
3-BD-072	4	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SG Blowdown to SGBDIX-3
3-BD-078	4	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SGBDIX-3 Drain to SGBDIX header
3-BD-081	4	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SGBDIX-2 Drain upstream of SGBDIX-1
3-BD-083	4	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SGBDIX-3 Drain upstream of SGBDIX-1
3-BD-084	4	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SGBDIX-3 Drain upstream of SGBDIX-2

Steam Generator Blowdown (BD), Unit 3

Section C: Excluded Lines

3-BD-01: Steam Generator Blowdown to Blowdown Tank and Sample Cooler

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-BD-087	4	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SGBDIX-1 Resin Trap to Post Filter header
3-BD-090	2	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SGBDIX-1 Resin Rinse to Drain
3-BD-091	2	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SGBDIX-2 Resin Rinse to Drain
3-BD-092	2	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SGBDIX-3 Resin Rinse to Drain
3-BD-093	4	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SGBDIX-1 Drain to Resin Trap
3-BD-094	2	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SGBDIX-1 and 2 Resin Rinse to Drain
3-BD-095	2	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	SGBDIX Resin Rinse to Drain
3-BD-098	1.5	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	Post Filter Bypass to Recycle Pump
3-BD-099	2	9321-F-24063	E	EI	Valve shown closed on P&ID.	P&ID	Recycle Pump exit to SGBDIX header

Condensate Pump Discharge (CD), Unit 3

Section A: CHECWORKS Model Lines

3-CD-02: Condensate Lines Downstream of #32 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-CD-001	14	9321-F-20183 Sheet 1	M		PEPSE	CD-02.1A FWH 32A to HDR: Condensate from FWH 32-A to Condensate Header
3-CD-002	14	9321-F-20183 Sheet 1	M		PEPSE	CD-02.1B FWH 32B to HDR: Condensate from FWH 32-B to Condensate Header
3-CD-003	14	9321-F-20183 Sheet 1	M		PEPSE	CD-02.1C FWH 32C to HDR: Condensate from FWH 32-C to Condensate Header
3-CD-004	20	9321-F-20183 Sheet 1	M		PEPSE	CD-02.2 FWH 32 OUT HDR: Condensate Header from FWHs 32-A and 32-B
3-CD-005	24	9321-F-20183 Sheet 1, 9321-F-20183 Sheet 2	M		PEPSE	CD-02.3 FWH 32 OUT HDR: Condensate Header to #33 FWHs
3-CD-006	24	9321-F-20183 Sheet 2	M		PEPSE	CD-02.4 FWH 32 OUT HDR: Condensate line to #33 FWHs
3-CD-007	8	9321-F-20183 Sheet 2	M		PEPSE	CD-02.11 SGBD HX3 to FWH HDR: Condensate to Steam Generator Blowdown HE #3
3-CD-008	8	9321-F-20183 Sheet 2	M		PEPSE	CD-02.5 FWH 32 OUT HDR: Condensate from Steam Generator Blowdown HE #3 tube side to #33 FWHs
3-CD-010	24	9321-F-20183 Sheet 2	M		PEPSE	CD-02.9 FWH HDR to SGBD HX3: Condensate line to #33 FWHs
3-CD-013	24	9321-F-20183 Sheet 2	M		PEPSE	CD-02.6 FWH 32 OUT HDR: Condensate Header to FWHs 33-A and 33-B
3-CD-017	14	9321-F-20183 Sheet 2	M		PEPSE	CD-02.8C HDR to FWH 33C: Condensate line to FWH 33-C

Condensate Pump Discharge (CD), Unit 3

Section A: CHECWORKS Model Lines

3-CD-02: Condensate Lines Downstream of #32 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-CD-018	14	9321-F-20183 Sheet 2	M		PEPSE	CD-02.8B HDR to FWH 33B: Condensate line to FWH 33-B
3-CD-019	14	9321-F-20183 Sheet 2	M		PEPSE	CD-02.8A HDR to FWH 33A: Condensate line to FWH 33-A
3-CD-020	14	9321-F-20183 Sheet 2	M		PEPSE	CD-03.1A FWH 33A to FWH 34A: Condensate line to FWH 34-A
3-CD-021	14	9321-F-20183 Sheet 2	M		PEPSE	CD-03.1B FWH 33B to FWH 34B: Condensate line to FWH 34-B
3-CD-022	14	9321-F-20183 Sheet 2	M		PEPSE	CD-03.1C FWH 33C to FWH 34C: Condensate line to FWH 34-C
3-CD-023	14	9321-F-20183 Sheet 2	M		PEPSE	CD-04.1A FWH 34A to FWH 35A: Condensate line to FWH 35-A
3-CD-024	14	9321-F-20183 Sheet 2	M		PEPSE	CD-04.1B FWH 34B to FWH 35B: Condensate line to FWH 35-B
3-CD-025	14	9321-F-20183 Sheet 2	M		PEPSE	CD-04.1C FWH 34C to FWH 35C: Condensate line to FWH 35-C
3-CD-026	14	9321-F-20183 Sheet 2	M		PEPSE	CD-05.1A FWH 35A to HDR: Condensate from FWH 35-A to Condensate Header
3-CD-027	14	9321-F-20183 Sheet 2	M		PEPSE	CD-05.1B FWH 35B to HDR: Condensate from FWH 35-B to Condensate Header
3-CD-028	14	9321-F-20183 Sheet 2	M		PEPSE	CD-05.1C FWH 35C to HDR: Condensate from FWH 35-C to Condensate Header
3-CD-029	24	9321-F-20183 Sheet 2	M		PEPSE	CD-05.3 FWH 35 OUT HDR: Condensate header from FWHs 35-A and 35-B

Condensate Pump Discharge (CD), Unit 3

Section A: CHECWORKS Model Lines

3-CD-02: Condensate Lines Downstream of #32 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-CD-030	24	9321-F-20183 Sheet 2	M		PEPSE	CD-05.4 FWH 35 OUT HDR: Condensate Header to BFPs Upstream of Heater Drain Pump inlet
3-CD-031	30	9321-F-20183 Sheet 2	M		PEPSE	CD-06.1 FWH 35 OUT HDR: Condensate Header to BFPs Downstream of Heater Drain Pump inlet
3-CD-032	24	9321-F-20183 Sheet 2, 9321-F-20193	M		PEPSE	CD-06.2A HDR to BFP 31: Condensate from Header to BFP No. 31
3-CD-033	24	9321-F-20183 Sheet 2, 9321-F-20193	M		PEPSE	CD-06.2B HDR to BFP 32: Condensate from Header to BFP No. 32

Section C: Excluded Lines

3-CD-02: Condensate Lines Downstream of #32 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-CD-009	1.5	9321-F-20183 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	CD-13 Bypass
3-CD-011	12	9321-F-20183 Sheet 2	E	EI	Valve shown closed on P&ID. FCV-1115/1116 leaking-by	P&ID	Feedwater Bypass line
3-CD-012	1.5	9321-F-20183 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	CD-19 Bypass
3-CD-014	1.5	9321-F-20183 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	CD-16-3 Bypass
3-CD-015	1.5	9321-F-20183 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	CD-16-2 Bypass
3-CD-016	1.5	9321-F-20183 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	CD-16-1 Bypass
3-CD-034	2	9321-F-20183 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	CD-21-2 Bypass

Condensate Pump Discharge (CD), Unit 3

Section C: Excluded Lines

3-CD-02: Condensate Lines Downstream of #32 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-CD-035	2	9321-F-20183 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	CD-21-1 Bypass

Condensate Storage & Transfer (CT), Unit 3

Section B: SNM Program Lines

3-CT-01: Lines from the Boiler Feed Pump Turbine Drip Tank to the Drip Tank Drain Pumps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-CT-001	3	9321-F-20243	S	NC	Operating conditions unknown.	P&ID	Drain header to BFPT Drain Pumps
3-CT-002	3	9321-F-20243	S	NC	Operating conditions unknown.	P&ID	Drain to BFPT Drain Pump No 31
3-CT-003	3	9321-F-20243	S	NC	Operating conditions unknown.	P&ID	Drain to BFPT Drain Pump No 32

Extraction Steam Traps (EST), Unit 3

Section B: SNM Program Lines

3-3EST-01: LP Turbine Extraction Steam to #33 FWHs Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-3EST-016-A	2	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	Extraction Steam to EST-14
3-3EST-016-B	2	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-14 to Steam Trap Header
3-3EST-017-A	2	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	Extraction Steam to EST-15
3-3EST-017-B	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-15 to Steam Trap Header
3-3EST-018-A	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	Extraction Steam to EST-16
3-3EST-018-B	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-16 to Steam Trap Header
3-3EST-019-A	2	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	Extraction Steam to EST-17
3-3EST-019-B	2	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-17 to Steam Trap Header
3-3EST-020-A	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	Extraction Steam to EST-18
3-3EST-020-B	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-18 to Steam Trap Header
3-3EST-021-A	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	Extraction Steam to EST-19
3-3EST-021-B	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-19 to Steam Trap Header
3-3EST-022-A	2	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	Extraction Steam to EST-20
3-3EST-022-B	2	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-20 to Steam Trap Header
3-3EST-023-A	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	Extraction Steam to EST-21
3-3EST-023-B	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-21 to Steam Trap Header
3-3EST-024-A	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	Extraction Steam to EST-22
3-3EST-024-B	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-22 to Steam Trap Header

Extraction Steam Traps (EST), Unit 3

Section B: SNM Program Lines

3-4EST-02: Steam Traps to the Steam Trap Drains Header from Extraction lines to #34 FWHs

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-4EST-001	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-5 to Steam Trap Header
3-4EST-002	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-6 to Steam Trap Header
3-4EST-003	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-7 to Steam Trap Header
3-4EST-004	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-8 to Steam Trap Header
3-4EST-005	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-9 to Steam Trap Header
3-4EST-006	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-10 to Steam Trap Header
3-4EST-007	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-11 to Steam Trap Header
3-4EST-008	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-12 to Steam Trap Header
3-4EST-009	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	EST-13 to Steam Trap Header

3-5EST-01: Extraction Steam to #35 FWHs Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-5EST-020	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping through steam trap LPT 7
3-5EST-021	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping steam trap bypass
3-5EST-022	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	Steam Trap LPT-7 Drain
3-5EST-026	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping through steam trap LPT 6
3-5EST-027	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping steam trap bypass
3-5EST-028	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	Steam Trap LPT-6 Drain

Extraction Steam Traps (EST), Unit 3

Section B: SNM Program Lines

3-5EST-01: Extraction Steam to #35 FWHs Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-5EST-032	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping through steam trap LPT 9
3-5EST-033	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping steam trap bypass
3-5EST-034	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	Steam Trap LPT-9 Drain
3-5EST-038	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping through steam trap LPT 8
3-5EST-039	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping steam trap bypass
3-5EST-040	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	Steam Trap LPT-8 Drain
3-5EST-044	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping through steam trap LPT 11
3-5EST-045	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping steam trap bypass
3-5EST-046	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping to Condenser 33
3-5EST-050	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping through steam trap LPT 10
3-5EST-051	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping steam trap bypass
3-5EST-052	0.75	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping to Condenser 33
3-5EST-072-A	2	9321-F-20313	S	NC	Operating conditions unknown.	P&ID	Extraction Steam to EST-3
3-5EST-072-B	0.75	9321-F-20313	S	NC	Operating conditions unknown.	P&ID	EST-3 to Steam Trap Header
3-5EST-073-A	2	9321-F-20313	S	NC	Operating conditions unknown.	P&ID	Extraction Steam to EST-23

Extraction Steam Traps (EST), Unit 3

Section B: SNM Program Lines

3-5EST-01: Extraction Steam to #35 FWHs Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-5EST-073-B	1	9321-F-20313	S	NC	Operating conditions unknown.	P&ID	EST-23 to Steam Trap Header
3-5EST-074-A	2	9321-F-20313	S	NC	Operating conditions unknown.	P&ID	Extraction Steam to EST-4
3-5EST-074-B	1	9321-F-20313	S	NC	Operating conditions unknown.	P&ID	EST-4 to Steam Trap Header

3-6EST-01: HP Turbine Extraction Steam to Extraction Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-6EST-015	2	9321-F-20313	S	NS	Flow Conditions Unknown	P&ID	Extraction Steam to EST-1 and EST-1A
3-6EST-016	2	9321-F-20313	S	NS	Flow Conditions Unknown	P&ID	Extraction Steam to EST-1
3-6EST-017	2	9321-F-20313	S	NS	Flow Conditions Unknown	P&ID	Extraction Steam to EST-1A
3-6EST-018	2	9321-F-20313	S	NS	Flow Conditions Unknown	P&ID	EST-1 to Steam Trap Header
3-6EST-019	2	9321-F-20313	S	NS	Flow Conditions Unknown	P&ID	EST-1A to Steam Trap Header
3-6EST-022	0.75	9321-F-20313	S	NS	Flow Conditions Unknown	P&ID	Extraction Steam to EST-2
3-6EST-023	0.75	9321-F-20313	S	NS	Flow Conditions Unknown	P&ID	EST-2 to Steam Trap Header

3-6EST-02: Extraction Steam Trap Drain Headers to the Drains Collecting Tank

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-6EST-026	6	9321-F-20313	S	NC	Operating conditions unknown.	P&ID	Drain Header from Extraction Steam Traps

Extraction Steam Traps (EST), Unit 3

Section C: Excluded Lines

3-3EST-01: LP Turbine Extraction Steam to #33 FWHs Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-3EST-016-C		9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	EST-14 Bypass Line
3-3EST-017-C		9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	EST-15 Bypass Line
3-3EST-018-C		9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	EST-16 Bypass Line
3-3EST-019-C		9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	EST-17 Bypass Line
3-3EST-020-C		9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	EST-18 Bypass Line
3-3EST-021-C		9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	EST-19 Bypass Line
3-3EST-022-C		9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	EST-20 Bypass Line
3-3EST-023-C		9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	EST-21 Bypass Line
3-3EST-024-C		9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	EST-22 Bypass Line

3-5EST-01: Extraction Steam to #35 FWHs Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-5EST-072-C	0.75	9321-F-20313	E	EI	Valve shown closed on P&ID.	9321-F-20313	EST-3 Bypass Line
3-5EST-073-C	0.75	9321-F-20313	E	EI	Valve shown closed on P&ID.	9321-F-20313	EST-23 Bypass Line
3-5EST-074-C	1	9321-F-20313	E	EI	Valve shown closed on P&ID.	9321-F-20313	EST-4 Bypass Line

3-6EST-01: HP Turbine Extraction Steam to Extraction Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-6EST-020	2	9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	EST-1 Bypass Line
3-6EST-021	2	9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	EST-1A Bypass Line
3-6EST-024	0.75	9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	EST-2 Bypass Line

Extraction Steam Traps (EST), Unit 3

Section C: Excluded Lines

3-6EST-02: Extraction Steam Trap Drain Headers to the Drains Collecting Tank

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-6EST-025	4	9321-F-20313	E	EM	Replaced with Chrome-moly	IP3-RPT-MULT-03162	Drain from EST 1, 1A, 2, 3, 4, and 23 to Drain Collecting Tank

Extraction Steam (EX), Unit 3

Section A: CHECWORKS Model Lines

3-1EX-01: LP Turbine Extraction Steam to #31 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-1EX-001	26	9321-F-20203 Sheet 2	M		PEPSE	EX-06.3A LP EXT 20 to FWH 31A: No. 20 Extraction Steam to FWH 31A
3-1EX-002	26	9321-F-20203 Sheet 2	M		PEPSE	EX-06.1A LP EXT 19 to FWH 31A: No. 19 Extraction Steam to FWH 31A
3-1EX-003	26	9321-F-20203 Sheet 2	M		PEPSE	EX-06.2A LP EXT 17 to FWH 31A: No. 17 Extraction Steam to FWH 31A
3-1EX-004	26	9321-F-20203 Sheet 2	M		PEPSE	EX-06.4A LP EXT 18 to FWH 31A: No. 18 Extraction Steam to FWH 31A
3-1EX-005	26	9321-F-20203 Sheet 2	M		PEPSE	EX-06.3B LP EXT 20 to FWH 31B: No. 20 Extraction Steam to FWH 31B
3-1EX-006	26	9321-F-20203 Sheet 2	M		PEPSE	EX-06.1B LP EXT 19 to FWH 31B: No. 19 Extraction Steam to FWH 31B
3-1EX-007	26	9321-F-20203 Sheet 2	M		PEPSE	EX-06.2B LP EXT 17 to FWH 31B: No. 17 Extraction Steam to FWH 31B
3-1EX-008	26	9321-F-20203 Sheet 2	M		PEPSE	EX-06.4B LP EXT 18 to FWH 31B: No. 18 Extraction Steam to FWH 31B
3-1EX-009	26	9321-F-20203 Sheet 2	M		PEPSE	EX-06.3C LP EXT 20 to FWH 31C: No. 20 Extraction Steam to FWH 31C
3-1EX-010	26	9321-F-20203 Sheet 2	M		PEPSE	EX-06.1C LP EXT 19 to FWH 31C: No. 19 Extraction Steam to FWH 31C
3-1EX-011	26	9321-F-20203 Sheet 2	M		PEPSE	EX-06.2C LP EXT 17 to FWH 31C: No. 17 Extraction Steam to FWH 31C
3-1EX-012	26	9321-F-20203 Sheet 2	M		PEPSE	EX-06.4C LP EXT 18 to FWH 31C: No. 18 Extraction Steam to FWH 31C

Extraction Steam (EX), Unit 3

Section A: CHECWORKS Model Lines

3-2EX-01: LP Turbine Extraction Steam to #32 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-2EX-001	22	9321-F-20203 Sheet 2	M		PEPSE	EX-05.1A LP EXT 16 to FWH 32A: No. 16 Extraction Steam to FWH 32A
3-2EX-002	22	9321-F-20203 Sheet 2	M		PEPSE	EX-05.2A LP EXT 15 to FWH 32A: No. 15 Extraction Steam to FWH 32A
3-2EX-003	22	9321-F-20203 Sheet 2	M		PEPSE	EX-05.1B LP EXT 16 to FWH 32B: No. 16 Extraction Steam to FWH 32B
3-2EX-004	22	9321-F-20203 Sheet 2	M		PEPSE	EX-05.2B LP EXT 15 to FWH 32B: No. 15 Extraction Steam to FWH 32B
3-2EX-005	22	9321-F-20203 Sheet 2	M		PEPSE	EX-05.1C LP EXT 16 to FWH 32C: No. 16 Extraction Steam to FWH 32C
3-2EX-006	22	9321-F-20203 Sheet 2	M		PEPSE	EX-05.2C LP EXT 15 to FWH 32C: No. 15 Extraction Steam to FWH 32C

3-3EX-01: LP Turbine Extraction Steam to #33 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-3EX-001	20	9321-F-20203 Sheet 2	M		PEPSE	EX-04.1 LPEX14 to FWH33A HDR: No. 14 Extraction Steam to FWH 33A
3-3EX-002	20	9321-F-20203 Sheet 2	M		PEPSE	EX-04.2 LPEX13 to FWH33A HDR: No. 13 Extraction Steam to FWH 33A
3-3EX-003	28	9321-F-20203 Sheet 2	M		PEPSE	EX-04.4 LPEX FWH 33A IN HDR: Extraction Steam header to FWH 33A
3-3EX-004	20	9321-F-20203 Sheet 2	M		PEPSE	EX-04.6 LP EXT to FWH 33A: Extraction Steam to FWH 33A
3-3EX-005	20	9321-F-20203 Sheet 2	M		PEPSE	EX-04.7 LP EXT to FWH 33A: Extraction Steam to FWH 33A
3-3EX-006	20	9321-F-20203 Sheet 2	M		PEPSE	EX-04.8 LPEX14 to FWH33B HDR: No. 14 Extraction Steam to FWH 33B

Extraction Steam (EX), Unit 3

Section A: CHECWORKS Model Lines

3-3EX-01: LP Turbine Extraction Steam to #33 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-3EX-007	20	9321-F-20203 Sheet 2	M		PEPSE	EX-04.9 LPEX13 to FWH33B HDR: No. 13 Extraction Steam to FWH 33B
3-3EX-008	28	9321-F-20203 Sheet 2	M		PEPSE	EX-04.11 LPEX FWH 33B IN HDR: Extraction Steam header to FWH 33B
3-3EX-009	20	9321-F-20203 Sheet 2	M		PEPSE	EX-04.13 LP EXT 32 to FWH 33B: Extraction Steam to FWH 33B
3-3EX-010	20	9321-F-20203 Sheet 2	M		PEPSE	EX-04.14 LP EXT 32 to FWH 33B: Extraction Steam to FWH 33B
3-3EX-011	20	9321-F-20203 Sheet 2	M		PEPSE	EX-04.15 LPEX14 to FWH33C HDR: No. 14 Extraction Steam to FWH 33C
3-3EX-012	20	9321-F-20203 Sheet 2	M		PEPSE	EX-04.16 LPEX13 to FWH33C HDR: No. 13 Extraction Steam to FWH 33C
3-3EX-013	28	9321-F-20203 Sheet 2	M		PEPSE	EX-04.18 LPEX FWH 33C IN HDR: Extraction Steam header to FWH 33B
3-3EX-014	20	9321-F-20203 Sheet 2	M		PEPSE	EX-04.21 LP EXT 31 to FWH 33C: Extraction Steam to FWH 33C
3-3EX-015	20	9321-F-20203 Sheet 2	M		PEPSE	EX-04.22 LP EXT 31 to FWH 33C: Extraction Steam to FWH 33C

3-3EX-02: Boiler Feed Pump Turbine Drains to Condensers

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-3EX-025	48	9321-F-20173	M		PEPSE	BFP #31 Drain to Condenser
3-3EX-026	48	9321-F-20173	M		PEPSE	BFP #32 Drain to Condenser

Extraction Steam (EX), Unit 3

Section A: CHECWORKS Model Lines

3-5EX-02: Extraction Steam from Moisture Preseparators to #35 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-5EX-063	28	9321-F-20203 Sheet 1	M		PEPSE	EX-02.14 FWH 35 HEADER: Crossunder piping from Moisture Preseparators to #35 Feedwater Heaters

Section B: SNM Program Lines

3-3EX-02: Boiler Feed Pump Turbine Drains to Condensers

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-3EX-027	1.5	9321-F-20243	S	NC	Operating conditions unknown.	P&ID	Continuous Drain to #31 Condenser
3-3EX-028	1.5	9321-F-20243	S	NC	Operating conditions unknown.	P&ID	Continuous Drain to #32 Condenser

3-5EX-01: HP Turbine Crossunder Piping Leakoff Drains to Condensers

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-5EX-001	2	9321-F-20203 Sheet 1, 9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	Drip Pot from Moisture Preseparator 1A to Heater Drain Tank Vent
3-5EX-002	2	9321-F-20203 Sheet 1, 9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	Drip Pot from Moisture Preseparator 2A to Heater Drain Tank Vent
3-5EX-003	2	9321-F-20203 Sheet 1, 9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	Drip Pot from Moisture Preseparator 1B to Heater Drain Tank Vent
3-5EX-004	2	9321-F-20203 Sheet 1, 9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	Drip Pot from Moisture Preseparator 2B to Heater Drain Tank Vent
3-5EX-019	10	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping header to Condenser 31
3-5EX-024	12	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping to Condenser 31

Extraction Steam (EX), Unit 3

Section B: SNM Program Lines

3-5EX-01: HP Turbine Crossunder Piping Leakoff Drains to Condensers

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-5EX-025	10	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping header to Condenser 31
3-5EX-030	12	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping to Condenser 31
3-5EX-031	10	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping header to Condenser 32
3-5EX-036	12	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping to Condenser 32
3-5EX-037	10	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping header to Condenser 32
3-5EX-042	12	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping to Condenser 32
3-5EX-043	10	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping header to Condenser 33
3-5EX-048	12	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping to Condenser 33
3-5EX-049	10	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping header to Condenser 33
3-5EX-054	12	9321-F-20203 Sheet 1	S	NC	Flow Conditions Unknown	PEPSE	H.P. Turbine crossunder piping to Condenser 33
3-5EX-076	1.5	9321-05-FP-2355	S	NS	Operating conditions unknown.	P&ID	Crossunder piping leakoff to FCV-1156
3-5EX-077	1.5	9321-05-FP-2355	S	NS	Operating conditions unknown.	P&ID	Crossunder piping leakoff to FCV-1164
3-5EX-078	1.5	9321-05-FP-2355	S	NS	Operating conditions unknown.	P&ID	Crossunder piping leakoff to FCV-1157
3-5EX-079	1.5	9321-05-FP-2355	S	NS	Operating conditions unknown.	P&ID	Crossunder piping leakoff to FCV-1165

Extraction Steam (EX), Unit 3

Section B: SNM Program Lines

3-5EX-01: HP Turbine Crossunder Piping Leakoff Drains to Condensers

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-5EX-080		9321-05-FP-2355	S	NS	Operating conditions unknown.	P&ID	Crossunder piping to Moisture Separator Outlet Line
3-5EX-081		9321-05-FP-2355	S	NS	Operating conditions unknown.	P&ID	Crossunder piping to Moisture Separator Outlet Line
3-5EX-082		9321-05-FP-2355	S	NS	Operating conditions unknown.	P&ID	Crossunder piping to Moisture Separator Outlet Line
3-5EX-083		9321-05-FP-2355	S	NS	Operating conditions unknown.	P&ID	Crossunder piping to Moisture Separator Outlet Line
3-5EX-085	1.5	9321-05-FP-2355	S	NS	Operating conditions unknown.	P&ID	Leakoff to Moisture Separation

3-5EX-02: Extraction Steam from Moisture Preseparators to #35 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-5EX-065-B	18	9321-F-20203 Sheet 1	S	NL	This line represents the only susceptible component in the line.	IP3-RPT-MULT-03162, Rev. 3; SFA	EX-02.16 HDR 35 to FWH 35A: Feedwater Heater 35A Extraction Steam Inlet Nozzle
3-5EX-066-B	18	9321-F-20203 Sheet 1	S	NL	This line represents the only susceptible component in the line.	IP3-RPT-MULT-03162, Rev. 3; SFA	EX-02.17 HDR 35 to FWH 35B: Feedwater Heater 35B Extraction Steam Inlet Nozzle
3-5EX-067-B	18	9321-F-20203 Sheet 1	S	NL	This line represents the only susceptible component in the line.	IP3-RPT-MULT-03162, Rev. 3; SFA	EX-02.19 HDR 35 to FWH 35C: Feedwater Heater 35C Extraction Steam Inlet Nozzle

3-6EX-01: HP Turbine Extraction Steam to #36 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-6EX-001-A	12	9321-F-20203 Sheet 1	S	NL	The nozzle is the only susceptible component in this line.	SFA Model	EX-01.1 HP EXT to FWH 36 HDR: HP Turbine Extraction Nozzle to #36 FWHs.

Extraction Steam (EX), Unit 3

Section B: SNM Program Lines

3-6EX-01: HP Turbine Extraction Steam to #36 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-6EX-002-A	12	9321-F-20203 Sheet 1	S	NL	This nozzle is the only susceptible component in the line.	SFA Model	EX-01.2 HP EXT to FWH 36 HDR: HP Turbine Extraction Nozzle to #36 FWHs.
3-6EX-025	1	9321-F-20203 Sheet 1	S	NS	Flow Conditions Unknown	P&ID	FWH 36A Extraction Steam Line Drain
3-6EX-026	1	9321-F-20203 Sheet 1	S	NS	Flow Conditions Unknown	P&ID	FWH 36B Extraction Steam Line Drain
3-6EX-027	1.5	9321-F-20203 Sheet 1	S	NS	Flow Conditions Unknown	P&ID	FWH 36A and 36B Extraction Steam Line Drain Header
3-6EX-028	1	9321-F-20203 Sheet 1	S	NS	Flow Conditions Unknown	P&ID	FWH 36C Extraction Steam Line Drain
3-6EX-029	2	9321-F-20203 Sheet 1	S	NS	Flow Conditions Unknown	P&ID	#36 FWH Extraction Steam Line Drain Header

Section C: Excluded Lines

3-5EX-01: HP Turbine Crossunder Piping Leakoff Drains to Condensers

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-5EX-023	10	9321-F-20203 Sheet 1	E	EI	FCV-1207 is shown closed on P&ID	P&ID	H.P. Turbine crossunder to Condenser 31
3-5EX-029	10	9321-F-20203 Sheet 1	E	EI	FCV-1206 is shown closed on P&ID	P&ID	H.P. Turbine crossunder to Condenser 31
3-5EX-035	10	9321-F-20203 Sheet 1	E	EI	FCV-1209 is shown closed on P&ID	P&ID	H.P. Turbine crossunder to Condenser 32
3-5EX-041	10	9321-F-20203 Sheet 1	E	EI	FCV-1208 is shown closed on P&ID	P&ID	H.P. Turbine crossunder to Condenser 32

Extraction Steam (EX), Unit 3

Section C: Excluded Lines

3-5EX-01: HP Turbine Crossunder Piping Leakoff Drains to Condensers

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-5EX-047	10	9321-F-20203 Sheet 1	E	EI	FCV-1211 is shown closed on P&ID	P&ID	H.P. Turbine crossunder to Condenser 33
3-5EX-053	10	9321-F-20203 Sheet 1	E	EI	FCV-1210 is shown closed on P&ID	P&ID	H.P. Turbine crossunder to Condenser 33
3-5EX-075	1.5	9321-F-20203 Sheet 1, 9321-F-20173	E	EM	Piping is Stainless Steel and Chrome-moly	P&ID	Line to Orifice Block
3-5EX-084	1.5	9321-05-FP-2355	E	EM	Replaced with Chrome-moly	IP3-RPT-MULT-03162	Balancing line leakoff to 3-MS-177

3-5EX-02: Extraction Steam from Moisture Preseparators to #35 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-5EX-055	10	9321-F-20203 Sheet 1	E	EM	Line is clad with Stainless Steel	IP3-RPT-MULT-03162, Rev. 3; SFA	EX-02.2 PSEP 1A 10" to 35 HDR: Crossunder piping header from Moisture Preseparator 1A to #35 FWH
3-5EX-056	10	9321-F-20203 Sheet 1	E	EM	Line is clad with Stainless Steel	IP3-RPT-MULT-03162, Rev. 3; SFA	EX-02.1 PSEP 2A 10" to 35 HDR: Crossunder piping header from Moisture Preseparator 2A to #35 FWH
3-5EX-057	10	9321-F-20203 Sheet 1	E	EM	Line is clad with Stainless Steel	IP3-RPT-MULT-03162, Rev. 3; SFA	EX-02.9 PSEP 1B 10" to 35 HDR: Crossunder piping header from Moisture Preseparator 1B to #35 FWH
3-5EX-058	10	9321-F-20203 Sheet 1	E	EM	Line is clad with Stainless Steel	IP3-RPT-MULT-03162, Rev. 3; SFA	EX-02.8 PSEP 2B 10" to 35 HDR: Crossunder piping header from Moisture Preseparator 2B to #35 FWH
3-5EX-059	14	9321-F-20203 Sheet 1	E	EM	Line is clad with Stainless Steel	IP3-RPT-MULT-03162, Rev. 3; SFA	EX-02.4 PSEP2A 14" to 35 HDR: Crossunder piping leakoff from Moisture Preseparator 2A to #35 FWH

Extraction Steam (EX), Unit 3

Section C: Excluded Lines

3-5EX-02: Extraction Steam from Moisture Preseparators to #35 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-5EX-060	14	9321-F-20203 Sheet 1	E	EM	Line is clad with Stainless Steel	IP3-RPT-MULT-03162, Rev. 3; SFA	EX-02.11 PSEP1B 14" to 35 HDR: Crossunder piping leakoff from Moisture Preseparator 1B to #35 FWH
3-5EX-061	18	9321-F-20203 Sheet 1	E	EM	Line is clad with Stainless Steel	IP3-RPT-MULT-03162, Rev. 3; SFA	EX-02.6 PSEP 1A&2A to 35 HDR, EX-02.7 PSEP 1A&2A to 35 HDR: Psep 2A to #35 FWHs
3-5EX-062	18	9321-F-20203 Sheet 1	E	EM	Line is clad with Stainless Steel	IP3-RPT-MULT-03162, Rev. 3; SFA	EX-02.12 PSEP 1B&2B to 35 HDR, EX-02.13 PSEP 1B&2B to 35 HDR: Psep 2B to #35 FWHs
3-5EX-064	28	9321-F-20203 Sheet 1	E	EM	Line is clad with Stainless Steel	IP3-RPT-MULT-03162, Rev. 3; SFA	EX-02.15 FWH 35 HEADER: Crossunder piping from Moisture Preseparators to 35A and 35B FWHs
3-5EX-065-A	18	9321-F-20203 Sheet 1	E	EM	Line is clad with Stainless Steel	IP3-RPT-MULT-03162, Rev. 3; SFA	EX-02.16 HDR 35 to FWH 35A: Crossunder piping to Feedwater Heater 35A
3-5EX-066-A	18	9321-F-20203 Sheet 1	E	EM	Line is clad with Stainless Steel	IP3-RPT-MULT-03162, Rev. 3; SFA	EX-02.17 HDR 35 to FWH 35B: Crossunder piping to Feedwater Heater 35B
3-5EX-067-A	18	9321-F-20203 Sheet 1	E	EM	Line is clad with Stainless Steel	IP3-RPT-MULT-03162, Rev. 3; SFA	EX-02.18 HDR 35 to FWH 35C: Crossunder piping to Feedwater Heater 35C
3-5EX-068	1.5	9321-F-20203 Sheet 1	E	EI	Valve shown closed on P&ID.	9321-F-20203	Valve 5EX-5-1 bypass
3-5EX-069	1.5	9321-F-20203 Sheet 1	E	EI	Valve shown closed on P&ID.	9321-F-20203	Valve 5EX-5-2 bypass
3-5EX-070	1.5	9321-F-20203 Sheet 1	E	EI	Valve shown closed on P&ID.	9321-F-20203	Valve 5EX-5-3 bypass
3-5EX-071	1.5	9321-F-20203 Sheet 1	E	EI	Valve shown closed on P&ID.	9321-F-20203	Valve 5EX-5-1 bypass

Extraction Steam (EX), Unit 3

Section C: Excluded Lines

3-6EX-01: HP Turbine Extraction Steam to #36 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-6EX-001-B	12	9321-F-20203 Sheet 1	E	EM	This line is clad with Stainless Steel	SFA Model	EX-01.1 HP EXT to FWH 36 HDR: HP Turbine Extraction Line to #36 FWHs.
3-6EX-002-B	12	9321-F-20203 Sheet 1	E	EM	This line is clad with Stainless Steel	SFA Model	EX-01.2 HP EXT to FWH 36 HDR: HP Turbine Extraction Line to #36 FWHs.
3-6EX-003	18	9321-F-20203 Sheet 1	E	EM	This line is clad with Stainless Steel	SFA Model	EX-01.3 HP EXT FWH 36 HEADER: HP Turbine Extraction Line to #36 FWHs.
3-6EX-004	18	9321-F-20203 Sheet 1	E	EM	This line is clad with Stainless Steel	SFA Model	EX-01.4 HP EXT FWH 36 HEADER: Extraction Steam header to FWH 36A and 36B
3-6EX-005	12	9321-F-20203 Sheet 1	E	EM	This line is clad with Stainless Steel	SFA Model	EX-01.5A HP EX HDR to FWH 36A: Extraction Steam to FWH 36A Upstream of VCD tie-in.
3-6EX-006	12	9321-F-20203 Sheet 1	E	EM	This line is clad with Stainless Steel	SFA Model	EX-01.5A HP EX HDR to FWH 36A: Extraction Steam to FWH 36A Downstream of VCD tie-in.
3-6EX-007	12	9321-F-20203 Sheet 1	E	EM	This line is clad with Stainless Steel	SFA Model	EX-01.5B HP EX HDR to FWH 36B: Extraction Steam to FWH 36B Upstream of VCD tie-in.
3-6EX-008	12	9321-F-20203 Sheet 1	E	EM	This line is clad with Stainless Steel	SFA Model	EX-01.5B HP EX HDR to FWH 36B: Extraction Steam to FWH 36B Downstream of VCD tie-in.
3-6EX-009	12	9321-F-20203 Sheet 1	E	EM	This line is clad with Stainless Steel	SFA Model	EX-01.5C HP EX HDR to FWH 36C: Extraction Steam to FWH 36C Upstream of VCD tie-in.
3-6EX-010	12	9321-F-20203 Sheet 1	E	EM	This line is clad with Stainless Steel	SFA Model	EX-01.5C HP EX HDR to FWH 36C: Extraction Steam to FWH 36C Downstream of VCD tie-in.

Extraction Steam (EX), Unit 3

Section C: Excluded Lines

3-6EX-01: HP Turbine Extraction Steam to #36 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-6EX-011	1	9321-F-20203 Sheet 1	E	EI	Valve shown closed on P&ID.	9321-F-20203	6EX-5-1 Bypass Line
3-6EX-012	1	9321-F-20203 Sheet 1	E	EI	Valve shown closed on P&ID.	9321-F-20203	6EX-5-2 Bypass Line
3-6EX-013	1	9321-F-20203 Sheet 1	E	EI	Valve shown closed on P&ID.	9321-F-20203	6EX-5-3 Bypass Line
3-6EX-014	1	9321-F-20203 Sheet 1	E	EI	Valve shown closed on P&ID.	9321-F-20203	6EX-1 Bypass Line

Main Feed Water (FW), Unit 3

Section A: CHECWORKS Model Lines

3-FW-01: Feedwater Lines from the Boiler Feed Pumps to the Steam Generators

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-FW-001	20	9321-F-20193	M		PEPSE	FW-01.1A BFP 31 to RCIRC T: BFP No. 31 Discharge Upstream of Recirc Line
3-FW-002	20	9321-F-20193	M		PEPSE	FW-01.2A BFP31 RCIRC T to HDR: BFP No. 31 Discharge Downstream of Recirc Line
3-FW-003	20	9321-F-20193	M		PEPSE	FW-01.1B BFP 32 to RCIRC T: BFP No. 32 Discharge Upstream of Recirc Line
3-FW-004	20	9321-F-20193	M		PEPSE	FW-01.2B BFP32 RCIRC T to HDR: BFP No. 32 Discharge Downstream of Recirc Line
3-FW-005	30	9321-F-20193	M		PEPSE	FW-01.3 BFP DISCHARGE HDR: BFP Discharge Header to #36 FWHs Upstream of High Pr. FWH Bypass Line
3-FW-006	30	9321-F-20193	M		PEPSE	FW-01.3 BFP DISCHARGE HDR: BFP Discharge Header to #36 FWHs Downstream of High Pr. FWH Bypass Line
3-FW-007	30	9321-F-20193	M		PEPSE	FW-01.4 BFP DISCHARGE HDR: BFP Discharge Header to FWHs 36A and 36B
3-FW-008	18	9321-F-20193	M		PEPSE	FW-01.6A BFP HDR to FWH 36A: Feedwater to FWH 36A
3-FW-009	18	9321-F-20193	M		PEPSE	FW-01.6B BFP HDR to FWH 36B: Feedwater to FWH 36B
3-FW-010	18	9321-F-20193	M		PEPSE	FW-01.6C BFP HDR to FWH 36C: Feedwater to FWH 36C

Main Feed Water (FW), Unit 3

Section A: CHECWORKS Model Lines

3-FW-01: Feedwater Lines from the Boiler Feed Pumps to the Steam Generators

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-FW-016	18	9321-F-20193	M		PEPSE	FW-02.1A FWH 36A to SG HDR: Feedwater from FWH 36A
3-FW-017	18	9321-F-20193	M		PEPSE	FW-02.1B FWH 36B to SG HDR: Feedwater from FWH 36B
3-FW-018	18	9321-F-20193	M		PEPSE	FW-02.1C FWH 36C to SG HDR: Feedwater from FWH 36C
3-FW-019	30	9321-F-20193	M		PEPSE	FW-02.3 SG INLET HEADER: Feedwater Header from FWH 36A and 36B
3-FW-020	30	9321-F-20193	M		PEPSE	FW-02.4 SG INLET HEADER: #36 FWH Feedwater Discharge Header Upstream of Bypass Line
3-FW-021	30	9321-F-20193	M		PEPSE	FW-02.4 SG INLET HEADER: #36 FWH Feedwater Discharge Header Downstream of Bypass Line
3-FW-023	18	9321-F-20193	M		PEPSE	FW-02.8A SG HDR to SG 31: Feedwater to 31 Steam Generator
3-FW-025	18	9321-F-20193	M		PEPSE	FW-02.8B SG HDR to SG 32: Feedwater to 32 Steam Generator
3-FW-027	18	9321-F-20193	M		PEPSE	FW-02.8D SG HDR to SG 33: Feedwater to 33 Steam Generator
3-FW-029	18	9321-F-20193	M		PEPSE	FW-02.8C SG HDR to SG 34: Feedwater to 34 Steam Generator
3-FW-031	30	9321-F-20193	M		PEPSE	FW-02.8D SG HDR to SG 33: Feedwater Header to Steam Generators
3-FW-032	30	9321-F-20193	M		PEPSE	FW-02.8D SG HDR to SG 33: Feedwater Header to Steam Generators

Main Feed Water (FW), Unit 3

Section A: CHECWORKS Model Lines

3-FW-01: Feedwater Lines from the Boiler Feed Pumps to the Steam Generators

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-FW-033	30	9321-F-20193	M		PEPSE	FW-02.6 SG INLET HEADER: Feedwater Header to Steam Generators
3-FW-034	30	9321-F-20193	M		PEPSE	FW-02.6 SG INLET HEADER: Feedwater Header to Steam Generators
3-FW-035	30	9321-F-20193	M		PEPSE	FW-02.5 SG INLET HEADER: Feedwater Header to Steam Generators
3-FW-036	30	9321-F-20193	M		PEPSE	FW-02.5 SG INLET HEADER: Feedwater Header to Steam Generators
3-FW-044-A	18	9321-F-20193	M		PEPSE	FW-02.8A SG HDR to SG 31: Feedwater to 31 Steam Generator Upstream of BFD-6-1
3-FW-044-B	18	9321-F-20193	M		PEPSE	FW-02.8A SG HDR to SG 31: Feedwater to 31 Steam Generator Downstream of BFD-6-1
3-FW-045-A	18	9321-F-20193	M		PEPSE	FW-02.8B SG HDR to SG 32: Feedwater to 32 Steam Generator Upstream of BFD-6-2
3-FW-045-B	18	9321-F-20193	M		PEPSE	FW-02.8B SG HDR to SG 32: Feedwater to 32 Steam Generator Downstream of BFD-6-2
3-FW-046-A	18	9321-F-20193	M		PEPSE	FW-02.8C SG HDR to SG 34: Feedwater to 34 Steam Generator Upstream of BFD-6-4
3-FW-046-B	18	9321-F-20193	M		PEPSE	FW-02.8C SG HDR to SG 34: Feedwater to 34 Steam Generator Downstream of BFD-6-4

Main Feed Water (FW), Unit 3

Section A: CHECWORKS Model Lines

3-FW-01: Feedwater Lines from the Boiler Feed Pumps to the Steam Generators

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-FW-047-A	18	9321-F-20193	M		PEPSE	FW-02.8D SG HDR to SG 33: Feedwater to 33 Steam Generator Upstream of BFD-6-3
3-FW-047-B	18	9321-F-20193	M		PEPSE	FW-02.8D SG HDR to SG 33: Feedwater to 33 Steam Generator Downstream of BFD-6-3

Section B: SNM Program Lines

3-FW-01: Feedwater Lines from the Boiler Feed Pumps to the Steam Generators

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-FW-022	0.75	9321-F-20193	S	NS	Operating conditions unknown.	9321-F-20193	Feedwater to Sampling Upstream of BFD-1266-1 and 1266-2
3-FW-024	6	9321-F-20193	S	NC	Operating conditions unknown.	9321-F-20193	Feedwater FRV bypass line to 31 Steam Generator
3-FW-026	6	9321-F-20193	S	NC	Operating conditions unknown.	9321-F-20193	Feedwater FRV bypass line to 32 Steam Generator
3-FW-028	6	9321-F-20193	S	NC	Operating conditions unknown.	9321-F-20193	Feedwater FRV bypass line to 33 Steam Generator
3-FW-030	6	9321-F-20193	S	NC	Operating conditions unknown.	9321-F-20193	Feedwater FRV bypass line to 34 Steam Generator

Main Feed Water (FW), Unit 3

Section C: Excluded Lines

3-FW-01: Feedwater Lines from the Boiler Feed Pumps to the Steam Generators

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-FW-011	1.5	9321-F-20193	E	EI	Valve shown closed on P&ID.	P&ID	BFD-3-1 Bypass Line
3-FW-012	1.5	9321-F-20193	E	EI	Valve shown closed on P&ID.	P&ID	BFD-3-2 Bypass Line
3-FW-013	1.5	9321-F-20193	E	EI	Valve shown closed on P&ID.	P&ID	BFD-3-3 Bypass Line
3-FW-014	18	9321-F-20193	E	EI	Valve shown closed on P&ID.	P&ID	High Pr. FWH Bypass Line
3-FW-015	1.5	9321-F-20193	E	EI	Valve shown closed on P&ID.	P&ID	BFD-8 Bypass Line
3-FW-037	0.75	9321-F-20193	E	EI	Valve shown closed on P&ID.	P&ID	Drain from SG 33 Feedwater min-flow line.
3-FW-038	0.75	9321-F-20193	E	EI	Valve shown closed on P&ID.	P&ID	Drain from SG 34 Feedwater min-flow line.
3-FW-039	0.75	9321-F-20193	E	EI	Valve shown closed on P&ID.	P&ID	Drain from SG 32 Feedwater min-flow line.
3-FW-040	0.75	9321-F-20193	E	EI	Valve shown closed on P&ID.	P&ID	Drain from SG 11 Feedwater min-flow line.
3-FW-041	0.75	9321-F-20193	E	EI	Valve shown closed on P&ID.	P&ID	Drain from SG 33 & 34 Feedwater min-flow lines.
3-FW-042	0.75	9321-F-20193	E	EI	Valve shown closed on P&ID.	P&ID	Drain from SG 32, 33 & 34 Feedwater min-flow lines.
3-FW-043	0.75	9321-F-20193	E	EI	Valve shown closed on P&ID.	P&ID	Drain from Feedwater min-flow lines.

3-FW-03: Boiler Feed Pump Recirc Lines to the Drains Collecting Tank

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-FW-048	6	9321-F-20193	E	EM	This line is CrMo.	SFA Database	FW-04.1A BFP 31 RECIRC: BFP No. 31 Recirc to Drains Collecting Tank

Main Feed Water (FW), Unit 3

Section C: Excluded Lines

3-FW-03: Boiler Feed Pump Recirc Lines to the Drains Collecting Tank

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-FW-049	6	9321-F-20193	E	EM	This line is CrMo.	SFA Database	FW-04.1B BFP 32 RECIRC: BFP No. 32 Recirc to Drains Collecting Tank

Gland Sealing Steam (GS), Unit 3

Section B: SNM Program Lines

3-GS-01: Gland Steam to and from HP, LP, and BFP Turbines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-GS-001	6	9321-F-20243	S	NC	Flow Conditions Unknown	PEPSE	Gland Seal supply to BFP Turbines
3-GS-005	4	9321-F-20243	S	NC	Operating conditions unknown.	PEPSE	Steam to BFPT #32
3-GS-006	4	9321-F-20243	S	NC	Operating conditions unknown.	PEPSE	Steam to BFPT #31
3-GS-007	3	9321-F-20243	S	NC	Operating conditions unknown.	PEPSE	Steam to BFPT #32
3-GS-008	3	9321-F-20243	S	NC	Operating conditions unknown.	PEPSE	Steam to BFPT #31
3-GS-017	3	9321-F-20243	S	NC	Operating conditions unknown.	P&IDs	BFPT #32 Gland Steam Discharge
3-GS-018	3	9321-F-20243	S	NC	Operating conditions unknown.	P&IDs	BFPT #31 Gland Steam Discharge
3-GS-021	6	9321-F-20243	S	NC	Operating conditions unknown.	P&IDs	BFPT Gland Steam Discharge Header to Gland Condenser
3-GS-022	2	9321-F-20243	S	NS	Operating conditions unknown.	P&ID	BFPT #31 Exhaust Cylinder Drain
3-GS-023	2	9321-F-20243	S	NS	Operating conditions unknown.	P&ID	BFPT #32 Exhaust Cylinder Drain
3-GS-024	3	9321-F-20243	S	NC	Operating conditions unknown.	P&IDs	BFPT Exhaust Cylinder Drain header to Boiler Feed Pump Drip Tank
3-GS-025	1	9321-F-20243	S	NS	Operating conditions unknown.	P&ID	BFPT Exhaust Cylinder Drain header line to Boiler Feed Pump Drip Tank vent
3-GS-026	3	9321-F-20243	S	NC	Operating conditions unknown.	P&ID	BFPT Drip Tank vent to Condenser #31
3-GS-027	0.75	9321-F-20243	S	NS	Operating conditions unknown.	P&ID	BFPT #32 Gland Steam Discharge Drain
3-GS-028	0.75	9321-F-20243	S	NS	Operating conditions unknown.	P&ID	BFPT #31 Gland Steam Discharge Drain
3-GS-029	0.75	9321-F-20243	S	NS	Operating conditions unknown.	P&ID	BFPT Gland Steam Discharge Header to Cylinder Drain

Gland Sealing Steam (GS), Unit 3

Section B: SNM Program Lines

3-GS-01: Gland Steam to and from HP, LP, and BFP Turbines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-GS-030	12	B237144, 9321-05-FP-2355	S	NC	Operating conditions unknown.	P&ID	Gland Seal Steam Header to HP and LP Turbines
3-GS-031	10	9321-05-FP-2355	S	NC	Operating conditions unknown.	P&ID	Gland Seal to HP Turbine
3-GS-032	10	9321-05-FP-2355	S	NC	Operating conditions unknown.	P&ID	Gland Seal to HP Turbine
3-GS-033	6	9321-05-FP-2355, 9321-F-20313	S	NC	Operating conditions unknown.	P&ID	Gland Seal to LP Turbine 31
3-GS-035	6	9321-05-FP-2355, 9321-F-20313	S	NC	Operating conditions unknown.	P&ID	Gland Seal to LP Turbine 31
3-GS-037	6	9321-05-FP-2355, 9321-F-20313	S	NC	Operating conditions unknown.	P&ID	Gland Seal to LP Turbine 32
3-GS-039	6	9321-05-FP-2355, 9321-F-20313	S	NC	Operating conditions unknown.	P&ID	Gland Seal to LP Turbine 32
3-GS-041	6	9321-05-FP-2355, 9321-F-20313	S	NC	Operating conditions unknown.	P&ID	Gland Seal to LP Turbine 33
3-GS-043	6	9321-05-FP-2355, 9321-F-20313	S	NC	Operating conditions unknown.	P&ID	Gland Seal to LP Turbine 33
3-GS-045	6	9321-05-FP-2355, 9321-F-20313	S	NC	Operating conditions unknown.	P&ID	Gland Seal Return from HP Turbine
3-GS-046	6	9321-05-FP-2355, 9321-F-20313	S	NC	Operating conditions unknown.	P&ID	Gland Seal Return from HP Turbine
3-GS-047		B237144	S	NC	Operating conditions unknown.	P&ID	Gland Seal Return from #31 LP Turbine
3-GS-048		B237144	S	NC	Operating conditions unknown.	P&ID	Gland Seal Return from #31 LP Turbine
3-GS-049		B237144	S	NC	Operating conditions unknown.	P&ID	Gland Seal Return from #32 LP Turbine

Gland Sealing Steam (GS), Unit 3

Section B: SNM Program Lines

3-GS-01: Gland Steam to and from HP, LP, and BFP Turbines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-GS-050		B237144	S	NC	Operating conditions unknown.	P&ID	Gland Seal Return from #32 LP Turbine
3-GS-051		B237144	S	NC	Operating conditions unknown.	P&ID	Gland Seal Return from #33 LP Turbine
3-GS-052		B237144	S	NC	Operating conditions unknown.	P&ID	Gland Seal Return from #33 LP Turbine
3-GS-053		9321-05-FP-2355, B237144	S	NC	Operating conditions unknown.	P&ID	Gland Seal return header to Gland Condenser
3-GS-054		B237144	S	NC	Operating conditions unknown.	P&ID	Gland Condenser Drain to Main Condenser
3-GS-056	1	B237144	S	NC	Operating conditions unknown.	P&ID	Steam Discharge Header drain to waste header

Section C: Excluded Lines

3-GS-01: Gland Steam to and from HP, LP, and BFP Turbines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-GS-019	0.75	9321-F-20243	E	EF	Low flow in waste drain	P&ID	BFPT #32 Gland Steam Floor Drain
3-GS-020	0.75	9321-F-20243	E	EF	Low flow in waste drain	P&ID	BFPT #31 Gland Steam Floor Drain
3-GS-034	2	9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	Gland Seal to floor drain
3-GS-036	2	9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	Gland Seal to floor drain
3-GS-038	2	9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	Gland Seal to floor drain
3-GS-040	2	9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	Gland Seal to floor drain
3-GS-042	2	9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	Gland Seal to floor drain

Gland Sealing Steam (GS), Unit 3

Section C: Excluded Lines

3-GS-01: Gland Steam to and from HP, LP, and BFP Turbines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-GS-044	2	9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	Gland Seal to drain collecting tank
3-GS-055		B237144	E	EI	Valve normally closed.	Engineering Judgment	Gland Condenser Waste Drain

Gland Steam Traps (GST), Unit 3

Section B: SNM Program Lines

3-GST-01: Gland Steam to and from Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-GST-002	0.75	9321-F-20243	S	NS	Operating conditions unknown.	PEPSE	Steam to GST-1
3-GST-004	0.75	9321-F-20243	S	NS	Operating conditions unknown.	PEPSE	GST-1 Discharge to Header
3-GST-009	0.75	9321-F-20243	S	NS	Operating conditions unknown.	PEPSE	Steam to GST-3
3-GST-011	0.75	9321-F-20243	S	NS	Operating conditions unknown.	PEPSE	GST-3 Discharge to Header
3-GST-012	0.75	9321-F-20243	S	NS	Operating conditions unknown.	PEPSE	Steam to GST-2
3-GST-014	0.75	9321-F-20243	S	NC	Operating conditions unknown.	PEPSE	GST-2 Discharge to Header
3-GST-015	2	9321-F-20243	S	NC	Operating conditions unknown.	PEPSE	Header from GST-1 and 3
3-GST-016	2	9321-F-20243	S	NC	Operating conditions unknown.	PEPSE	Gland Steam Trap Header to Boiler Feed Pump Drip Tank

Section C: Excluded Lines

3-GST-01: Gland Steam to and from Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-GST-003	0.75	9321-F-20243	E	EI	Valve shown closed on P&ID.	P&ID	GST-1 Bypass
3-GST-010	0.75	9321-F-20243	E	EI	Valve shown closed on P&ID.	P&ID	GST-3 Bypass
3-GST-013	0.75	9321-F-20243	E	EI	Valve shown closed on P&ID.	P&ID	GST-2 Bypass

Heater Drains & Vents (HD), Unit 3

Section A: CHECWORKS Model Lines

3-1HD-01: #31 Feedwater Heater Drain Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-1HD-001	12	9321-F-20223 Sheet 2	M	Low temperature line with potential for flashing	PEPSE	FWH 31A to Condenser 33 via LCV 1124
3-1HD-002	12	9321-F-20223 Sheet 2	M	Low temperature line with potential for flashing	PEPSE	FWH 31B to Condenser 32 via LCV 1125
3-1HD-003	12	9321-F-20223 Sheet 2	M	Low temperature line with potential for flashing	PEPSE	FWH 31C to Condenser 31 via LCV 1126

3-2HD-01: #32 Feedwater Heater Drain Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-2HD-001	12	9321-F-20223 Sheet 2	M	Low temperature line with potential for flashing	PEPSE	HD-08.1A FWH 32A to FWH 31A: FWH 32A Drain to FWH 31A
3-2HD-004	12	9321-F-20223 Sheet 2	M	Low temperature line with potential for flashing	PEPSE	HD-08.1B FWH 32B to FWH 31B: FWH 32B Drain to FWH 31B
3-2HD-007	12	9321-F-20223 Sheet 2	M	Low temperature line with potential for flashing	PEPSE	HD-08.1C FWH 32C to FWH 31C: FWH 32C Drain to FWH 31C

3-3HD-01: #33 Feedwater Heater Drain Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-3HD-001	8	9321-F-20223 Sheet 2	M		PEPSE	HD-06.1A FWH 33A to FWH 32A: FWH 33A Drain to FWH 32A
3-3HD-002	8	9321-F-20223 Sheet 2	M		PEPSE	HD-06.1B FWH 33B to FWH 32B: FWH 33B Drain to FWH 32B
3-3HD-003	8	9321-F-20223 Sheet 2	M		PEPSE	HD-06.1C FWH 33C to FWH 32C: FWH 33C Drain to FWH 32C

Heater Drains & Vents (HD), Unit 3

Section A: CHECWORKS Model Lines

3-4HD-01: #34 Feedwater Heater Drain Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-4HD-001	6	9321-F-20223 Sheet 2	M		PEPSE	HD-04.1A FWH 34A to FWH 33A: FWH 34A Drain to FWH 33A
3-4HD-002	6	9321-F-20223 Sheet 2	M		PEPSE	HD-04.1B FWH 34B to FWH 33B: FWH 34B Drain to FWH 33B
3-4HD-003	6	9321-F-20223 Sheet 2	M		PEPSE	HD-04.1C FWH 34C to FWH 33C: FWH 34C Drain to FWH 33C

3-5HD-01: Heater Drains from #35 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-5HD-001	10	9321-F-20223 Sheet 1	M		PEPSE	HD-03.1A FWH 35A to HD TK: FWH 35A Drain to Heater Drain Tank
3-5HD-002	10	9321-F-20223 Sheet 1	M		PEPSE	HD-03.1B FWH 35B to HD TK: FWH 35B Drain to Heater Drain Tank
3-5HD-003	10	9321-F-20223 Sheet 1	M		PEPSE	HD-03.1C FWH 35C to HD TK: FWH 35C Drain to Heater Drain Tank

3-5HD-03: HDT Drains to Heater Drain Pumps and Condensers and Heater Drain Pump Vents to HDT

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-5HD-019	18	9321-F-20223 Sheet 1	M		PEPSE	HD-10.1A HD TK to HD PMP 31: HDT to #31 HDP
3-5HD-020	18	9321-F-20223 Sheet 1	M		PEPSE	HD-10.1B HD TK to HD PMP 32: HDT to #32 HDP

Heater Drains & Vents (HD), Unit 3

Section A: CHECWORKS Model Lines

3-6HD-01: Heater Drains from #36 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-6HD-001	10	9321-F-20223 Sheet 1	M		PEPSE	HD-01.1A FWH 36A to HD TK: Drain from Feedwater Heater 36A to Heater Drain Tank
3-6HD-002	10	9321-F-20223 Sheet 1	M		PEPSE	HD-01.1B FWH 36B to HD TK: Drain from Feedwater Heater 36B to Heater Drain Tank
3-6HD-003	10	9321-F-20223 Sheet 1	M		PEPSE	HD-01.1C FWH 36C to HD TK: Drain from Feedwater Heater 36C to Heater Drain Tank

3-HD-01: Heater Drain Pump discharge to Boiler Feed Pumps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-HD-001	12	9321-F-20223 Sheet 1	M		PEPSE	HD-11.1A HD PMP 31 to HDR: #31 HDP to Heater Drain Pump Header
3-HD-002	12	9321-F-20223 Sheet 1	M		PEPSE	HD-11.1B HD PMP 32 to HDR: #32 HDP to Heater Drain Pump Header
3-HD-003	16	9321-F-20223 Sheet 1, 9321-F-20183 Sheet 2	M		PEPSE	HD-12.2A HD PMP HDR to CD SYS: Heater Drain Pump Header to Boiler Feed Pumps
3-HD-004	16	9321-F-20183 Sheet 2	M		PEPSE	HD-12.2A HD PMP HDR to CD SYS: Heater Drain Pump Discharge to BFPs

Heater Drains & Vents (HD), Unit 3

Section B: SNM Program Lines

3-1HD-02: #31 Feedwater Heater Vents

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-1HD-010	5	9321-F-20223 Sheet 2	S	NC	Operating conditions unknown.	P&ID	FWH 31A 5" Vent to Condenser 33
3-1HD-011	5	9321-F-20223 Sheet 2	S	NC	Operating conditions unknown.	P&ID	FWH 31B 5" Vent to Condenser 32
3-1HD-012	5	9321-F-20223 Sheet 2	S	NC	Operating conditions unknown.	P&ID	FWH 31C 5" Vent to Condenser 31
3-1HD-013	1	9321-F-20223 Sheet 2	S	NS	Operating conditions unknown.	P&ID	FWH 31A 1" Vent to Condenser 33
3-1HD-014	1	9321-F-20223 Sheet 2	S	NS	Operating conditions unknown.	P&ID	FWH 31B 1" Vent to Condenser 32
3-1HD-015	1	9321-F-20223 Sheet 2	S	NS	Operating conditions unknown.	P&ID	FWH 31C 1" Vent to Condenser 31

3-2HD-02: #32 Feedwater Heater Vents

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-2HD-013	2.5	9321-F-20223 Sheet 2	S	NC	Operating conditions unknown.	P&ID	FWH 32A 2-1/2" Vent to Condenser 33
3-2HD-014	2.5	9321-F-20223 Sheet 2	S	NC	Operating conditions unknown.	P&ID	FWH 32B 2-1/2" Vent to Condenser 32
3-2HD-015	2.5	9321-F-20223 Sheet 2	S	NC	Operating conditions unknown.	P&ID	FWH 32C 2-1/2" Vent to Condenser 31
3-2HD-016	1	9321-F-20223 Sheet 2	S	NS	Operating conditions unknown.	P&ID	FWH 32A 1" Vent to Condenser 33
3-2HD-017	1	9321-F-20223 Sheet 2	S	NS	Operating conditions unknown.	P&ID	FWH 32B 1" Vent to Condenser 32
3-2HD-018	1	9321-F-20223 Sheet 2	S	NS	Operating conditions unknown.	P&ID	FWH 32C 1" Vent to Condenser 31
3-2HD-019	6	9321-F-20223 Sheet 2	S	NC	Operating conditions unknown.	P&ID	FWH 32A High Level Dump to Condenser 33
3-2HD-020	6	9321-F-20223 Sheet 2	S	NC	Operating conditions unknown.	P&ID	FWH 32B High Level Dump to Condenser 32
3-2HD-021	6	9321-F-20223 Sheet 2	S	NC	Operating conditions unknown.	P&ID	FWH 32C High Level Dump to Condenser 31

Heater Drains & Vents (HD), Unit 3

Section B: SNM Program Lines

3-3HD-01: #33 Feedwater Heater Drain Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-3HD-007	8	9321-F-20223 Sheet 2	S	NC	Flow Conditions Unknown	PEPSE	FWH 33A drain condenser bypass line to FWH 32 A
3-3HD-010	8	9321-F-20223 Sheet 2	S	NC	Flow Conditions Unknown	PEPSE	FWH 33A Drain to Condenser 33

3-4HD-02: #34 Feedwater Heater Vents

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-4HD-015	1	9321-F-20223 Sheet 2	S	NS	Operating conditions unknown.	P&ID	FWH 34A 1" Vent
3-4HD-016	1	9321-F-20223 Sheet 2	S	NS	Operating conditions unknown.	P&ID	FWH 34B 1" Vent
3-4HD-017	1	9321-F-20223 Sheet 2	S	NS	Operating conditions unknown.	P&ID	FWH 34C 1" Vent
3-4HD-018	2	9321-F-20223 Sheet 2	S	NS	Operating conditions unknown.	P&ID	2" Vent Header from FWH 34A and 34B
3-4HD-019	2	9321-F-20223 Sheet 2	S	NS	Operating conditions unknown.	P&ID	2" Vent Header from #34 FWHs to Condenser 32
3-4HD-020	1.5	9321-F-20223 Sheet 2	S	NS	Operating conditions unknown.	P&ID	FWH 34A 1.5" Vent
3-4HD-021	1.5	9321-F-20223 Sheet 2	S	NS	Operating conditions unknown.	P&ID	FWH 34B 1.5" Vent
3-4HD-022	1.5	9321-F-20223 Sheet 2	S	NS	Operating conditions unknown.	P&ID	FWH 34C 1.5" Vent
3-4HD-023	2	9321-F-20223 Sheet 2	S	NS	Operating conditions unknown.	P&ID	2" Vent Header from FWH 34A and 34B
3-4HD-024	3	9321-F-20223 Sheet 2	S	NC	Operating conditions unknown.	P&ID	3" Vent Header from #34 FWHs to Condenser 32

Heater Drains & Vents (HD), Unit 3

Section B: SNM Program Lines

3-5HD-02: Heater Vents from #35 Feedwater Heater and Heater Drain Tank vents to #35 Feedwater Heaters and Flas

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-5HD-004	10	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	Heater Drain Tank vent to FWH 35A
3-5HD-005	10	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	Heater Drain Tank vent to FWH 35B
3-5HD-006	10	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	Heater Drain Tank vent to FWH 35C
3-5HD-007	12	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	Heater Drain Tank vent to Flash Tank
3-5HD-008	12	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	Heater Drain Tank vent to Flash Tank
3-5HD-009	1.25	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	FWH 35A Vent header to condenser No. 33
3-5HD-010	1.25	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	FWH 35B Vent header to condenser No. 33
3-5HD-011	1.25	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	FWH 35C Vent header to condenser No. 33
3-5HD-012	2	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	Vent line from 35A and 35B Feedwater Heaters to condenser
3-5HD-013	2.5	9321-F-20223 Sheet 1, 9321-F-20223 Sheet 2	S	NC	Operating conditions unknown.	PEPSE	Vent from #35 Feedwater Heaters to Condenser No.33
3-5HD-014	6	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	FWH 35A vent header to Flash Tank
3-5HD-015	6	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	FWH 35B vent header to Flash Tank
3-5HD-016	6	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	FWH 35C vent header to Flash Tank
3-5HD-017	10	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	FWH 35B and 35C to Flash Tank
3-5HD-018	10	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	Vent from #35 Feedwater Heaters to Flash Tank

Heater Drains & Vents (HD), Unit 3

Section B: SNM Program Lines

3-5HD-03: HDT Drains to Heater Drain Pumps and Condensers and Heater Drain Pump Vents to HDT

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-5HD-021	2	9321-F-20223 Sheet 1	S	NS	Operating conditions unknown.	P&ID	#31 HDP vent to HDT
3-5HD-022	2	9321-F-20223 Sheet 1	S	NS	Operating conditions unknown.	P&ID	#32 HDP vent to HDT

3-6HD-02: Heater Vents from #36 Feedwater Heater

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-6HD-020	12	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	FWH 36A vent to Flash Tank
3-6HD-021	12	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	FWH 36A vent to Flash Tank
3-6HD-022	12	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	FWH 36B vent to Flash Tank
3-6HD-023	12	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	FWH 36B vent to Flash Tank
3-6HD-024	12	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	FWH 36C vent to Flash Tank
3-6HD-025	12	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	FWH 36C vent to Flash Tank
3-6HD-028	16	9321-F-20223 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	Flash Tank drain to Discharge Tunnel

Section C: Excluded Lines

3-1HD-01: #31 Feedwater Heater Drain Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-1HD-004	12	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 31A to Condenser 33 via LCV 1124A
3-1HD-005	12	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 31B to Condenser 32 via LCV 1125A
3-1HD-006	12	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 31C to Condenser 31 via LCV 1126A

Heater Drains & Vents (HD), Unit 3

Section C: Excluded Lines

3-1HD-02: #31 Feedwater Heater Vents

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-1HD-007	6	9321-F-20223 Sheet 2	E	EI	High level dumps operate infrequently	P&ID	FWH 31A High Level Dump to Condenser 33
3-1HD-008	6	9321-F-20223 Sheet 2	E	EI	High level dumps operate infrequently	P&ID	FWH 31B High Level Dump to Condenser 32
3-1HD-009	6	9321-F-20223 Sheet 2	E	EI	High level dumps operate infrequently	P&ID	FWH 31C High Level Dump to Condenser 31

3-2HD-01: #32 Feedwater Heater Drain Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-2HD-002	12	9321-F-20223 Sheet 2	E	EM	Line replaced with Stainless Steel	SFA Model	HD-09.3A FWH 32A to FWH 31A: FWH 32A Drain to FWH 31A
3-2HD-003	12	9321-F-20223 Sheet 2	E	EM	Line replaced with Stainless Steel	SFA Model	HD-09.4A FWH 32A to FWH 31A: FWH 32A Drain to FWH 31A
3-2HD-005	12	9321-F-20223 Sheet 2	E	EM	Line replaced with Stainless Steel	SFA Model	HD-09.3B FWH 32B to FWH 31B: FWH 32B Drain to FWH 31B
3-2HD-006	12	9321-F-20223 Sheet 2	E	EM	Line replaced with Stainless Steel	SFA Model	HD-09.4B FWH 32B to FWH 31B: FWH 32B Drain to FWH 31B
3-2HD-008	12	9321-F-20223 Sheet 2	E	EM	Line replaced with Stainless Steel	SFA Model	HD-09.3C FWH 32C to FWH 31C: FWH 32C Drain to FWH 31C
3-2HD-009	12	9321-F-20223 Sheet 2	E	EM	Line replaced with Stainless Steel	SFA Model	HD-09.4C FWH 32C to FWH 31C: FWH 32C Drain to FWH 31C
3-2HD-010	8	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 32A Drain to Condenser 33
3-2HD-011	8	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 32B Drain to Condenser 32
3-2HD-012	8	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 32C Drain to Condenser 31

Heater Drains & Vents (HD), Unit 3

Section C: Excluded Lines

3-3HD-01: #33 Feedwater Heater Drain Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-3HD-004	8	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 33A Drain to Condenser 33
3-3HD-005	8	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 33B Drain to Condenser 32
3-3HD-006	8	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 33C Drain to Condenser 31
3-3HD-008	8	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 33B Condenser 32 bypass to FWH 32B
3-3HD-009	8	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 33C Condenser 31 bypass to FWH 32C
3-3HD-011	8	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 33B Drain to Condenser 32
3-3HD-012	8	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 33C Drain to Condenser 31

3-3HD-02: #33 Feedwater Heater Vents

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-3HD-013	1	9321-F-20223 Sheet 2	E	EM	Replaced with Chrome-moly	IP3-RPT-MULT-03162	FWH 33A 1" Vent
3-3HD-014	1	9321-F-20223 Sheet 2	E	EM	Replaced with Chrome-moly	IP3-RPT-MULT-03162	FWH 33B 1" Vent
3-3HD-015	1	9321-F-20223 Sheet 2	E	EM	Replaced with Chrome-moly	IP3-RPT-MULT-03162	FWH 33C 1" Vent
3-3HD-016	1.5	9321-F-20223 Sheet 2	E	EM	Replaced with Chrome-moly	IP3-RPT-MULT-03162	1.5" Vent From FWH 33A and 33B
3-3HD-017	2	9321-F-20223 Sheet 2	E	EM	Replaced with Chrome-moly	IP3-RPT-MULT-03162	2" Vent From #33 FWHs to Condenser #31
3-3HD-018	2	9321-F-20223 Sheet 2	E	EM	Line replaced with Chrome-Moly in 3R12.	IP3-RPT-MULT-03162, Rev. 3, Appendix B	2" Vent from FWH 33A
3-3HD-019	2	9321-F-20223 Sheet 2	E	EM	Line replaced with Chrome-Moly in 3R12.	IP3-RPT-MULT-03162, Rev. 3, Appendix B	2" Vent from FWH 33B
3-3HD-020	2	9321-F-20223 Sheet 2	E	EM	Line replaced with Chrome-Moly in 3R12.	IP3-RPT-MULT-03162, Rev. 3, Appendix B	2" Vent from FWH 33C

Heater Drains & Vents (HD), Unit 3

Section C: Excluded Lines

3-3HD-02: #33 Feedwater Heater Vents

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-3HD-021	2	9321-F-20223 Sheet 2	E	EM	Line replaced with Chrome-Moly in 3R12.	IP3-RPT-MULT-03162, Rev. 3, Appendix B	2" Vent through orifice 3HD-RO-39-1
3-3HD-022	2	9321-F-20223 Sheet 2	E	EM	Line replaced with Chrome-Moly in 3R12.	IP3-RPT-MULT-03162, Rev. 3, Appendix B	2" Vent through orifice 3HD-RO-39-2
3-3HD-023	2	9321-F-20223 Sheet 2	E	EM	Line replaced with Chrome-Moly in 3R12.	IP3-RPT-MULT-03162, Rev. 3, Appendix B	2" Vent through orifice 3HD-RO-39-3
3-3HD-024	2	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	2" Vent orifice 3HD-RO-39-1 Bypass
3-3HD-025	2	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	2" Vent orifice 3HD-RO-39-2 Bypass
3-3HD-026	2	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	2" Vent orifice 3HD-RO-39-3 Bypass
3-3HD-027	2	9321-F-20223 Sheet 2	E	EM	Line replaced with Chrome-Moly in 3R12.	IP3-RPT-MULT-03162, Rev. 3, Appendix B	FWH 33A 2" Vent Header
3-3HD-028	2	9321-F-20223 Sheet 2	E	EM	Line replaced with Chrome-Moly in 3R12.	IP3-RPT-MULT-03162, Rev. 3, Appendix B	FWH 33B 2" Vent Header
3-3HD-029	2	9321-F-20223 Sheet 2	E	EM	Line replaced with Chrome-Moly in 3R12.	IP3-RPT-MULT-03162, Rev. 3, Appendix B	FWH 33C 2" Vent Header
3-3HD-030	3	9321-F-20223 Sheet 2	E	EM	Line replaced with Chrome-Moly in 3R12.	IP3-RPT-MULT-03162, Rev. 3, Appendix B	3" Vent Header from FWH 33A and 33B
3-3HD-031	4	9321-F-20223 Sheet 2	E	EM	Line replaced with Chrome-Moly in 3R12.	IP3-RPT-MULT-03162, Rev. 3, Appendix B	4" Vent Header from #33 FWHs
3-3HD-032	8	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 33A Relief Valve
3-3HD-033	8	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 33B Relief Valve
3-3HD-034	8	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 33C Relief Valve
3-3HD-035	12	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	Relief Valve Header from FWH 33C and 33B

Heater Drains & Vents (HD), Unit 3

Section C: Excluded Lines

3-3HD-02: #33 Feedwater Heater Vents

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-3HD-036	12	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	#33 FWH Relief Valve vent to Discharge Tunnel

3-4HD-01: #34 Feedwater Heater Drain Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-4HD-004	6	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 34A drain bypass to condenser
3-4HD-005	6	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 34B drain bypass to condenser
3-4HD-006	6	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 34C drain bypass to condenser
3-4HD-007	6	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 34A drain to condenser #33
3-4HD-008	6	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 34B drain to condenser #32
3-4HD-009	6	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 34C drain to condenser #31

3-4HD-02: #34 Feedwater Heater Vents

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-4HD-010	8	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 34A Relief Valve
3-4HD-011	8	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 34B Relief Valve
3-4HD-012	8	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	FWH 34C Relief Valve
3-4HD-013	12	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	Relief Valve Header from FWH 34C and 34B
3-4HD-014	12	9321-F-20223 Sheet 2	E	EI	Valve shown closed on P&ID.	P&ID	#34 FWH Relief Valve vent to Discharge Tunnel

Heater Drains & Vents (HD), Unit 3

Section C: Excluded Lines

3-5HD-03: HDT Drains to Heater Drain Pumps and Condensers and Heater Drain Pump Vents to HDT

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-5HD-023	24	9321-F-20223 Sheet 1, 9321-F-20223 Sheet 2	E	EI	Line operates less than 2% of the time	P&ID	Heater Drain Tank drain to Condensers
3-5HD-024	24	9321-F-20223 Sheet 2	E	EI	Line operates less than 2% of the time	P&ID	HDT Drain Header to Condensers 31 and 32
3-5HD-025-A	14	9321-F-20223 Sheet 2	E	EI	Line operates less than 2% of the time. It has been noted that LCV 1127D leaks	P&ID	HDT Drain to LCV-1127D
3-5HD-025-B	14	9321-F-20223 Sheet 2	E	EI	Line operates less than 2% of the time. It has been noted that LCV 1127D leaks	P&ID	LCV-1127D to Condenser 31
3-5HD-026	8	9321-F-20223 Sheet 2	E	EI	Line operates less than 2% of the time	P&ID	LCV-1127D Bypass Line
3-5HD-027-A	14	9321-F-20223 Sheet 2	E	EI	Line operates less than 2% of the time	P&ID	HDT Drain to LCV-1127C
3-5HD-027-B	14	9321-F-20223 Sheet 2	E	EI	Line operates less than 2% of the time	P&ID	LCV-1127C to Condenser 32
3-5HD-028	8	9321-F-20223 Sheet 2	E	EI	Line operates less than 2% of the time	P&ID	LCV-1127C Bypass Line
3-5HD-029-A	14	9321-F-20223 Sheet 2	E	EI	Line operates less than 2% of the time	P&ID	HDT Drain to LCV-1127B
3-5HD-029-B	14	9321-F-20223 Sheet 2	E	EI	Line operates less than 2% of the time	P&ID	LCV-1127B to Condenser 33
3-5HD-030	8	9321-F-20223 Sheet 2	E	EI	Line operates less than 2% of the time	P&ID	LCV-1127B Bypass Line
3-5HD-031	2	9321-F-20223 Sheet 2, 9321-F-20223 Sheet 1	E	EI	Line operates less than 2% of the time	P&ID	Fill Line from HDT Drain to Condensers to Moisture Preseparator drain

3-6HD-01: Heater Drains from #36 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-6HD-004	1	9321-F-20223 Sheet 1	E	EI	Valve shown closed on P&ID.	P&ID	Drain header from Feedwater 36A to Condenser
3-6HD-005	1.25	9321-F-20223 Sheet 1	E	EI	Valve shown closed on P&ID.	P&ID	Drain header from Feedwater 36A to Condenser

Heater Drains & Vents (HD), Unit 3

Section C: Excluded Lines

3-6HD-01: Heater Drains from #36 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-6HD-006	1.25	9321-F-20223 Sheet 1	E	EM	Line replaced with Chrome-Moly in 3R11.	IP3-RPT-MULT-03162, Rev. 3, Attachment B	Drain header from Feedwater 36A to Condenser
3-6HD-007	1.25	9321-F-20223 Sheet 1	E	EI	Valve shown closed on P&ID.	P&ID	Bypass of valves 6HD-28-1 and 6HD-30-1
3-6HD-008	1.25	9321-F-20223 Sheet 1	E	EM	Line replaced with Chrome-Moly in 3R11.	IP3-RPT-MULT-03162, Rev. 3, Attachment B	Drain from Feedwater Heater 36A towards Condenser
3-6HD-009	1	9321-F-20223 Sheet 1	E	EI	Valve shown closed on P&ID.	P&ID	Drain header from Feedwater 36B to Condenser
3-6HD-010	1.25	9321-F-20223 Sheet 1	E	EI	Valve shown closed on P&ID.	P&ID	Drain header from Feedwater 36B to Condenser
3-6HD-011	1.25	9321-F-20223 Sheet 1	E	EM	Line replaced with Chrome-Moly in 3R11.	IP3-RPT-MULT-03162, Rev. 3, Attachment B	Drain header from Feedwater 36B to Condenser
3-6HD-012	1.25	9321-F-20223 Sheet 1	E	EI	Valve shown closed on P&ID.	P&ID	Bypass of valves 6HD-28-2 and 6HD-30-2
3-6HD-013	2	9321-F-20223 Sheet 1	E	EM	Line replaced with Chrome-Moly in 3R11.	IP3-RPT-MULT-03162, Rev. 3, Attachment B	Drain from Feedwater Heaters 36A and 36B to Condenser
3-6HD-014	1	9321-F-20223 Sheet 1	E	EI	Valve shown closed on P&ID.	P&ID	Drain header from Feedwater 36C to Condenser
3-6HD-015	1.25	9321-F-20223 Sheet 1	E	EI	Valve shown closed on P&ID.	P&ID	Drain header from Feedwater 36C to Condenser
3-6HD-016	1.25	9321-F-20223 Sheet 1	E	EM	Line replaced with Chrome-Moly in 3R11.	IP3-RPT-MULT-03162, Rev. 3, Attachment B	Drain header from Feedwater 36C to Condenser
3-6HD-017	1.25	9321-F-20223 Sheet 1	E	EI	Valve shown closed on P&ID.	P&ID	Bypass of valves 6HD-28-3 and 6HD-30-3
3-6HD-018	1.25	9321-F-20223 Sheet 1	E	EM	Line replaced with Chrome-Moly in 3R11.	IP3-RPT-MULT-03162, Rev. 3, Attachment B	Drain header from Feedwater 36C to Condenser
3-6HD-019	2.5	9321-F-20223 Sheet 1, 9321-F-20223 Sheet 2	E	EM	Line replaced with Chrome-Moly in 3R11.	IP3-RPT-MULT-03162, Rev. 3, Attachment B	Drain from #36 Feedwater heaters to No 33 Condenser

Heater Drains & Vents (HD), Unit 3

Section C: Excluded Lines

3-6HD-02: Heater Vents from #36 Feedwater Heater

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-6HD-029		9321-F-20223 Sheet 1	E	EF	Low to no flow in vent to atmosphere	PEPSE	Flash Tank vent to atmosphere
3-6HD-030		9321-F-20223 Sheet 1	E	EF	Low to no flow in vent to atmosphere	PEPSE	Flash Tank vent to atmosphere

Main Steam (MS), Unit 3

Section A: CHECWORKS Model Lines

3-MS-10: HP Turbine Crossunder Piping to MSRs and condensers

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-MS-183	32	9321-F-20203 Sheet 1	M		PEPSE	HP Turbine Crossunder to Moisture Preseparator 1A
3-MS-184	32	9321-F-20203 Sheet 1	M		PEPSE	HP Turbine Crossunder to Moisture Preseparator 1B
3-MS-185	32	9321-F-20203 Sheet 1	M		PEPSE	HP Turbine Crossunder to Moisture Preseparator 2A
3-MS-186	32	9321-F-20203 Sheet 1	M		PEPSE	HP Turbine Crossunder to Moisture Preseparator 2B
3-MS-187	32	9321-F-20203 Sheet 1	M		PEPSE	Moisture Preseparator 1A to MSR Header
3-MS-188	32	9321-F-20203 Sheet 1	M		PEPSE	Moisture Preseparator 1B to MSR Header
3-MS-189	32	9321-F-20203 Sheet 1	M		PEPSE	Moisture Preseparator 2A to MSR Header
3-MS-190	32	9321-F-20203 Sheet 1	M		PEPSE	Moisture Preseparator 2B to MSR Header
3-MS-191	45.5	9321-F-20203 Sheet 1	M		PEPSE	Moisture Preseparator Header to A MSRs
3-MS-192	45.5	9321-F-20203 Sheet 1	M		PEPSE	Moisture Preseparator Header to B MSRs
3-MS-193	37	9321-F-20203 Sheet 1	M		PEPSE	Moisture Preseparator Header to MSR 31A and 32A
3-MS-194	37	9321-F-20203 Sheet 1	M		PEPSE	Moisture Preseparator Header to MSR 31B and 32B
3-MS-195	26.5	9321-F-20203 Sheet 1	M		PEPSE	Moisture Preseparator Header to MSR 31A
3-MS-196	26.5	9321-F-20203 Sheet 1	M		PEPSE	Moisture Preseparator Header to MSR 32A

Main Steam (MS), Unit 3

Section A: CHECWORKS Model Lines

3-MS-10: HP Turbine Crossunder Piping to MSRs and condensers

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-MS-197	26.5	9321-F-20203 Sheet 1	M		PEPSE	Moisture Preseparator Header to MSR 33A
3-MS-198	26.5	9321-F-20203 Sheet 1	M		PEPSE	Moisture Preseparator Header to MSR 31B
3-MS-199	26.5	9321-F-20203 Sheet 1	M		PEPSE	Moisture Preseparator Header to MSR 32B
3-MS-200	26.5	9321-F-20203 Sheet 1	M		PEPSE	Moisture Preseparator Header to MSR 33B

Section B: SNM Program Lines

3-MS-01: Main Steam from SG to HP Turbine, BFP Turbine, MSRs, Aux. Steam, SJAEs, and Priming Ejectors.

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MS-005	28	9321-F-20173, 9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Main Steam from Steam Generator 31 Shell
3-MS-006	28	9321-F-20173, 9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Main Steam from Steam Generator 32 Shell
3-MS-007	28	9321-F-20173, 9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Main Steam from Steam Generator 33 Shell
3-MS-008	28	9321-F-20173, 9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Main Steam from Steam Generator 34 Shell
3-MS-009	24	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Line from 3-MS-005 to Seal Steam and MSR Header.
3-MS-010	24	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Line from 3-MS-006 to Gland Seal Steam and MSR B Header.
3-MS-011	20	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Gland Seal Steam, MSR B, and Aux. Steam Header.

Main Steam (MS), Unit 3

Section B: SNM Program Lines

3-MS-01: Main Steam from SG to HP Turbine, BFP Turbine, MSRs, Aux. Steam, SJAEs, and Priming Ejectors.

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MS-012	20	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Main Steam Balancing Line between 3-MS-005 and 3-MS-007
3-MS-013	24	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Line from 3-MS-005 to MSR A Header
3-MS-014	24	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Line from 3-MS-008 to MSR A Header
3-MS-015	20	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	MSR A, BFP Turbine, SJAE, and Priming Ejector Header
3-MS-016	28	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Main Steam from Steam Gen No 31 to HP Turbine Inlet
3-MS-017	28	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Main Steam from Steam Gen No 32 to HP Turbine Inlet
3-MS-018	28	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Main Steam from Steam Gen No 33 to HP Turbine Inlet
3-MS-019	28	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Main Steam from Steam Gen No 34 to HP Turbine Inlet
3-MS-024	12	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Main Steam to Reheater Steam Control Station A.
3-MS-025	8	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Reheater Steam Control Station A line to PCV 1175-1
3-MS-026	8	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Reheater Steam Control Station A line to PCV 1175-2
3-MS-028	12	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Reheater Steam Header A
3-MS-029	6	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Reheater Header to MSR 33A
3-MS-030	6	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Reheater Header to MSR 32A
3-MS-031	6	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Reheater Header to MSR 31A

Main Steam (MS), Unit 3

Section B: SNM Program Lines

3-MS-01: Main Steam from SG to HP Turbine, BFP Turbine, MSRs, Aux. Steam, SJAEs, and Priming Ejectors.

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MS-032	1	9321-F-20173, 9321-F-20233 Sheet 1	S	NC	Unknown operating conditions	P&ID	PCV-1175-1 Leakoff Line to Condenser
3-MS-034	2	9321-F-20233 Sheet 1	S	NC	Unknown operating conditions	P&ID	PCV-1175-1 and PCV-1175-2 Leakoff Line to Condenser
3-MS-035	12	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Main Steam to Reheater Steam Control Station B.
3-MS-036	8	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Reheater Steam Control Station B line to PCV 1175-3
3-MS-037	8	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Reheater Steam Control Station B line to PCV 1175-4
3-MS-038	1	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Reheater Steam Control Station B bypass line to PCV 1109
3-MS-039	12	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Reheater Steam Header B
3-MS-040	6	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Reheater Header to MSR 31B
3-MS-041	6	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Reheater Header to MSR 32B
3-MS-042	6	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Reheater Header to MSR 33B
3-MS-044	1	9321-F-20173, 9321-F-20233 Sheet 2	S	NC	Unknown operating conditions	P&ID	PCV-1175-3 Leakoff Line to Condenser
3-MS-045	2	9321-F-20233 Sheet 2	S	NC	Unknown operating conditions	P&ID	PCV-1175-3 and PCV-1175-4 Leakoff Line to Condenser
3-MS-046	1	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Reheater Cal. Line
3-MS-047	4	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Main Steam to BFP #32 Turbine
3-MS-048	4	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Main Steam to BFP #31 Turbine
3-MS-049	6	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Main Steam to SJAEs and Priming Ejectors

Main Steam (MS), Unit 3

Section B: SNM Program Lines

3-MS-01: Main Steam from SG to HP Turbine, BFP Turbine, MSRs, Aux. Steam, SJAEs, and Priming Ejectors.

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MS-050	3	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	SJAE Steam Supply Upstream of PCV 1132
3-MS-051	3	9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply Downstream of PCV 1132
3-MS-053	3	9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Header
3-MS-054	2	9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	Header to SJAE 31
3-MS-055	2	9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	Header to SJAE 32
3-MS-056	2	9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	Header to SJAE 33
3-MS-057		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 131-1
3-MS-058		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 131-2
3-MS-059		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 131-3
3-MS-060		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 131-4
3-MS-061		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 132-1
3-MS-062		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 132-2
3-MS-063		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 131-5
3-MS-064		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 131-6
3-MS-065		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 131-7
3-MS-066		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 131-8
3-MS-067		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 132-3
3-MS-068		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 132-4
3-MS-069		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 131-9

Main Steam (MS), Unit 3

Section B: SNM Program Lines

3-MS-01: Main Steam from SG to HP Turbine, BFP Turbine, MSRs, Aux. Steam, SJAEs, and Priming Ejectors.

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MS-070		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 131-10
3-MS-071		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 131-11
3-MS-072		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 131-12
3-MS-073		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 132-5
3-MS-074		9321-F-20173	S	NC	Operating conditions unknown.	PEPSE	SJAE Steam Supply via 132-6
3-MS-080	12	9321-F-20173	S	NQ	High quality main steam line.	PEPSE	Balancing line between Steam supply lines from Steam Gen No 32 and 34
3-MS-081	3	9321-F-20173	S	NC	Operating conditions unknown.	P&ID	MS-HCV-416-1 leakoff to condenser
3-MS-082	3	9321-F-20173	S	NC	Operating conditions unknown.	P&ID	MS-HCV-416-2 leakoff to condenser
3-MS-083	3	9321-F-20173	S	NC	Operating conditions unknown.	P&ID	MS-HCV-416-3 leakoff to condenser
3-MS-084	3	9321-F-20173	S	NC	Operating conditions unknown.	P&ID	MS-HCV-416-4 leakoff to condenser
3-MS-149	0.75	9321-F-20173	S	NS	Operating conditions unknown.	P&ID	Main Steam Stop Valve drain to 33 Cond.
3-MS-150	0.75	9321-F-20173	S	NS	Operating conditions unknown.	P&ID	Main Steam Stop Valve drain to 33 Cond.
3-MS-151	2	9321-F-20173	S	NC	Operating conditions unknown.	P&ID	Header to 33 Cond.
3-MS-162	4	9321-F-20173, 9321-F-41573	S	NQ	High quality main steam line.	PEPSE	Main Steam Header to Aux. Steam Upstream of PCV-1257
3-MS-166	3	9321-F-41573	S	NQ	High quality main steam line.	PEPSE	PCV-1257 Bypass
3-MS-168	1	9321-F-20173, 9321-F-41283	S	NQ	High quality main steam line.	PEPSE	Main Steam to Mud Drum
3-MS-169	3	9321-F-41283	S	NQ	High quality main steam line.	PEPSE	Main Steam to Mud Drum
3-MS-170	3	9321-F-41283	S	NQ	High quality main steam line.	PEPSE	Main Steam to Mud Drum

Main Steam (MS), Unit 3

Section B: SNM Program Lines

3-MS-01: Main Steam from SG to HP Turbine, BFP Turbine, MSRs, Aux. Steam, SJAEs, and Priming Ejectors.

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MS-173	2.5	9321-F-41283	S	NQ	High quality main steam line.	PEPSE	Main Steam vent to Service Boiler Blowdown Tank roof vent

3-MS-08: Main Steam Supply to Gland Steam Header

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MS-152	4	9321-F-20173, 9321-F-20313	S	NC	High quality main steam line.	PEPSE	Main Steam Supply to Gland Seal Regulator Station
3-MS-153-A	3	9321-F-20313, B237144	S	NC	High quality main steam line.	PEPSE	Gland Seal Steam Supply upstream of PCV-1211
3-MS-153-B	12	9321-F-20313, B237144	S	NC	Operating conditions unknown.	P&ID	Gland Seal Steam Supply downstream of PCV-1211
3-MS-157	12	9321-F-20313	S	NC	Operating conditions unknown.	P&ID	Header to Condenser drains
3-MS-157-A	6	9321-F-20313	S	NC	Operating conditions unknown.	P&ID	Drain to No. 33 Condenser
3-MS-157-B	0.75	9321-F-20313	S	NS	Operating conditions unknown.	P&ID	Drain to No. 33 Condenser
3-MS-159	12	9321-F-20313, B237144	S	NC	Operating conditions unknown.	P&ID	Main Steam to Gland Seal Steam Header.
3-MS-160	6	9321-F-20313, 9321-F-20243	S	NC	Flow Conditions Unknown	PEPSE	Gland Steam to Boiler Feed Pump Turbines

3-MS-09: H.P. Turbine Control Valve Piping

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MS-174		9321-05-FP-2355	S	NS	Operating conditions unknown.	P&ID	LH Control Valve Stem Leak-off Lines
3-MS-175		9321-05-FP-2355	S	NS	Operating conditions unknown.	P&ID	RH Control Valve Stem Leak-off Lines
3-MS-176	1.5	9321-05-FP-2355	S	NS	Operating conditions unknown.	P&ID	Upper LH HP Turbine Feed Leakoff

Main Steam (MS), Unit 3

Section B: SNM Program Lines

3-MS-09: H.P. Turbine Control Valve Piping

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MS-177	1.5	9321-05-FP-2355	S	NS	Operating conditions unknown.	P&ID	Lower LH HP Turbine Feed Leakoff
3-MS-178	1.5	9321-05-FP-2355	S	NS	Operating conditions unknown.	P&ID	Upper RH HP Turbine Feed Leakoff
3-MS-179	1.5	9321-05-FP-2355	S	NS	Operating conditions unknown.	P&ID	Lower LH HP Turbine Feed Leakoff
3-MS-182	1.5	9321-05-FP-2355	S	NS	Operating conditions unknown.	P&ID	HP Turbine Drain
3-MS-201		9321-05-FP-2355, B237144	S	NC	Operating conditions unknown.	P&ID	LP Leakoff from Valve Stems to Gland Condenser

Section C: Excluded Lines

3-MS-01: Main Steam from SG to HP Turbine, BFP Turbine, MSRs, Aux. Steam, SJAEs, and Priming Ejectors.

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-MS-020	1.5	9321-F-20173	E	EI	Valve shown closed on P&ID.	P&ID	Main Steam from Gen No 31 bypass to HP Turbine
3-MS-021	1.5	9321-F-20173	E	EI	Valve shown closed on P&ID.	P&ID	Main Steam from Gen No 32 bypass to HP Turbine
3-MS-022	1.5	9321-F-20173	E	EI	Valve shown closed on P&ID.	P&ID	Main Steam from Gen No 33 bypass to HP Turbine
3-MS-023	1.5	9321-F-20173	E	EI	Valve shown closed on P&ID.	P&ID	Main Steam from Gen No 34 bypass to HP Turbine
3-MS-027	1	9321-F-20173	E	EI	Valve shown closed on P&ID.	P&ID	Reheater Steam Control Station A bypass line to PCV 1108
3-MS-033	1	9321-F-20173, 9321-F-20233 Sheet 1	E	EI	Valves are closed for Unit 2	System Description 18.	PCV-1175-2 Leakoff Line to Condenser
3-MS-043	1	9321-F-20173, 9321-F-20233 Sheet 2	E	EI	Valves are closed for Unit 2	System Description 18.	PCV-1175-4 Leakoff Line to Condenser

Main Steam (MS), Unit 3

Section C: Excluded Lines

3-MS-01: Main Steam from SG to HP Turbine, BFP Turbine, MSRs, Aux. Steam, SJAEs, and Priming Ejectors.

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-MS-052	2	9321-F-20173	E	EI	Valve shown closed on P&ID.	P&ID	PCV 1132 Bypass Line
3-MS-075-A	6	9321-F-20173	E	EI	Priming Ejectors are only used during startup (infrequent use)	P&ID	Main Steam to Priming Ejectors Header Upstream of PCV 1133
3-MS-075-B	6	9321-F-20173	E	EI	Priming Ejectors are only used during startup (infrequent use)	P&ID	Main Steam to Priming Ejectors Header Downstream of PCV 1133
3-MS-075-C	6	9321-F-20173	E	EI	Valve shown closed on P&ID.	P&ID	PCV 1133 Bypass Line
3-MS-076	6	9321-F-20173	E	EI	Priming Ejectors are only used during startup (infrequent use)	P&ID	Priming Ejector Header to PE 32 and 33
3-MS-077	3	9321-F-20173	E	EI	Priming Ejectors are only used during startup (infrequent use)	P&ID	Priming Ejectors Header to PE 31
3-MS-078	3	9321-F-20173	E	EI	Priming Ejectors are only used during startup (infrequent use)	P&ID	Priming Ejectors Header to PE 32
3-MS-079	3	9321-F-20173	E	EI	Priming Ejectors are only used during startup (infrequent use)	P&ID	Priming Ejectors Header to PE 33
3-MS-164	1	9321-F-41573	E	EI	Valve shown closed on P&ID.	P&ID	MS-71 Bypass
3-MS-167	4	9321-F-41573	E	EI	Valve shown closed on P&ID.	P&ID	Vent off of Aux Steam Header
3-MS-171	2	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	TCV 133 Bypass
3-MS-172	1	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	PCV 1151 Bypass

3-MS-08: Main Steam Supply to Gland Steam Header

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-MS-154-A	3	9321-F-20313, B237144	E	EI	Valve shown closed on P&ID.	P&ID	Gland Seal Steam Supply upstream of PCV-1212
3-MS-154-B	0.5	9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	MS-192 bypass to Gland Seal Steam Supply

Main Steam (MS), Unit 3

Section C: Excluded Lines

3-MS-08: Main Steam Supply to Gland Steam Header

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-MS-154-C	2	9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	Drain to condenser
3-MS-154-D	12	9321-F-20313, B237144	E	EI	Valve shown closed on P&ID.	P&ID	Gland Seal Steam Supply downstream of PCV-1212
3-MS-155	3	9321-F-20313, B237144	E	EI	Valve shown closed on P&ID.	P&ID	PCV-1211 and 1212 bypass line
3-MS-156-A	10	9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	Vent to Atmosphere
3-MS-156-B	8	9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	Vent to Atmosphere
3-MS-158-A	2	9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	Drain from H.P. Turbine to Condenser No. 33
3-MS-158-B	2	9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	Drain from H.P. Turbine to Condenser No. 33
3-MS-161	2	9321-F-20313	E	EI	Valve shown closed on P&ID.	P&ID	Gland Steam to Drain Collecting Tank

3-MS-09: H.P. Turbine Control Valve Piping

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-MS-180	1.5	9321-05-FP-2355	E	EM	Replaced with Chrome-moly	IP3-RPT-MULT-03162	HP Turbine Drain from Far Side Inlet
3-MS-181	1.5	9321-05-FP-2355	E	EM	Replaced with Chrome-moly	IP3-RPT-MULT-03162	HP Turbine Drain from Near Side Inlet

Moisture Separator Reheater Drains (MSD), Unit 3

Section A: CHECWORKS Model Lines

3-MSD-01: Moisture Separator Drains to the Heater Drain Tank

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-MSD-043	12	9321-F-20233 Sheet 1	M		PEPSE	MSD-01.1A_1 MSEP 31A to HDR: MSR 31A drain
3-MSD-044	12	9321-F-20233 Sheet 1	M		PEPSE	MSD-01.1A_2 MSEP 31A to HDR: MSR 31A drain
3-MSD-045	12	9321-F-20233 Sheet 1	M		PEPSE	MSD-01.1A_3 MSEP 31A to HDR: MSR 31A drain
3-MSD-046	12	9321-F-20233 Sheet 1	M		PEPSE	MSD-01.2A MSEP 31A DR HDR: MSR 31A drain header to MS Drain Tank
3-MSD-047	12	9321-F-20233 Sheet 1	M		PEPSE	MSD-01.3A HDR to MSEP TK 31A: MSR 31A drain to MS Drain Tank
3-MSD-048	12	9321-F-20233 Sheet 1	M		PEPSE	MSD-01.6A_1 MSEP 32A to HDR: MSR 32A drain
3-MSD-049	12	9321-F-20233 Sheet 1	M		PEPSE	MSD-01.6A_2 MSEP 32A to HDR: MSR 32A drain
3-MSD-050	12	9321-F-20233 Sheet 1	M		PEPSE	MSD-01.6A_3 MSEP 32A to HDR: MSR 32A drain
3-MSD-051	12	9321-F-20233 Sheet 1	M		PEPSE	MSD-01.7A MSEP 32A DR HDR: MSR 32A drain header to MS Drain Tank
3-MSD-052	12	9321-F-20233 Sheet 1	M		PEPSE	MSD-01.8A HDR to MSEP TK 32A: MSR 32A drain to MS Drain Tank
3-MSD-053	12	9321-F-20233 Sheet 1	M		PEPSE	MSD-01.11A_1 MSEP 33A to HDR: MSR 33A drain
3-MSD-054	12	9321-F-20233 Sheet 1	M		PEPSE	MSD-01.11A_2 MSEP 33A to HDR: MSR 33A drain
3-MSD-055	12	9321-F-20233 Sheet 1	M		PEPSE	MSD-01.11A_3 MSEP 33A to HDR: MSR 33A drain

Moisture Separator Reheater Drains (MSD), Unit 3

Section A: CHECWORKS Model Lines

3-MSD-01: Moisture Separator Drains to the Heater Drain Tank

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-MSD-056	12	9321-F-20233 Sheet 1	M		PEPSE	MSD-01.12A MSEP 33A DR HDR: MSR 33A drain header to MS Drain Tank
3-MSD-057	12	9321-F-20233 Sheet 1	M		PEPSE	MSD-01.13A HDR to MSEP TK 33A: MSR 33A drain to MS Drain Tank
3-MSD-058	12	9321-F-20233 Sheet 2	M		PEPSE	MSD-01.1B_1 MSEP 31B to HDR: MSR 31B drain
3-MSD-059	12	9321-F-20233 Sheet 2	M		PEPSE	MSD-01.1B_2 MSEP 31B to HDR: MSR 31B drain
3-MSD-060	12	9321-F-20233 Sheet 2	M		PEPSE	MSD-01.1B_3 MSEP 31B to HDR: MSR 31B drain
3-MSD-061	12	9321-F-20233 Sheet 2	M		PEPSE	MSD-01.2B MSEP 31B DR HDR: MSR 31B drain header to MS Drain Tank
3-MSD-062	12	9321-F-20233 Sheet 2	M		PEPSE	MSD-01.3B HDR to MSEP TK 31B: MSR 31B drain to MS Drain Tank
3-MSD-063	12	9321-F-20233 Sheet 2	M		PEPSE	MSD-01.6B_1 MSEP 32B to HDR: MSR 32B drain
3-MSD-064	12	9321-F-20233 Sheet 2	M		PEPSE	MSD-01.6B_2 MSEP 32B to HDR: MSR 32B drain
3-MSD-065	12	9321-F-20233 Sheet 2	M		PEPSE	MSD-01.6B_3 MSEP 32B to HDR: MSR 32B drain
3-MSD-066	12	9321-F-20233 Sheet 2	M		PEPSE	MSD-01.7B MSEP 32B DR HDR: MSR 32B drain header to MS Drain Tank
3-MSD-067	12	9321-F-20233 Sheet 2	M		PEPSE	MSD-01.8B HDR to MSEP TK 32B: MSR 32B drain to MS Drain Tank

Moisture Separator Reheater Drains (MSD), Unit 3

Section A: CHECWORKS Model Lines

3-MSD-01: Moisture Separator Drains to the Heater Drain Tank

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-MSD-068	12	9321-F-20233 Sheet 2	M		PEPSE	MSD-01.11B_1 MSEP 33B to HDR: MSR 33B drain
3-MSD-069	12	9321-F-20233 Sheet 2	M		PEPSE	MSD-01.11B_2 MSEP 33B to HDR: MSR 33B drain
3-MSD-070	12	9321-F-20233 Sheet 2	M		PEPSE	MSD-01.11B_3 MSEP 33B to HDR: MSR 33B drain
3-MSD-071	12	9321-F-20233 Sheet 2	M		PEPSE	MSD-01.12B MSEP 33B DR HDR: MSR 33B drain header to MS Drain Tank
3-MSD-072	12	9321-F-20233 Sheet 2	M		PEPSE	MSD-01.13B HDR to MSEP TK 33B: MSR 33B drain to MS Drain Tank

3-MSD-02: Reheater Drains to #36 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-MSD-007	6	9321-F-20233 Sheet 1	M		PEPSE	RHD-01.1A_1 RH 31A to TK 31A: Reheater 31A to Reheater Drain Tank
3-MSD-008	6	9321-F-20233 Sheet 1	M		PEPSE	RHD-01.3A_1 RH 32A to TK 32A: Reheater 32A to Reheater Drain Tank
3-MSD-009	6	9321-F-20233 Sheet 1	M		PEPSE	RHD-01.10A_1 RH 33A to TK 33A: Reheater 33A to Reheater Drain Tank
3-MSD-010	6	9321-F-20233 Sheet 2	M		PEPSE	RHD-01.1B_1 RH 31B to TK 31B: Reheater 31B to Reheater Drain Tank
3-MSD-011	6	9321-F-20233 Sheet 2	M		PEPSE	RHD-01.3B_1 RH 32B to TK 32B: Reheater 32B to Reheater Drain Tank
3-MSD-012	6	9321-F-20233 Sheet 2	M		PEPSE	RHD-01.10B_1 RH 33B to TK 33B: Reheater 33B to Reheater Drain Tank

Moisture Separator Reheater Drains (MSD), Unit 3

Section A: CHECWORKS Model Lines

3-MSD-02: Reheater Drains to #36 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-MSD-013	6	9321-F-20233 Sheet 1	M		PEPSE	RHD-01.1A_2 TK 31A to A HDR: Reheater Drain Tank 31A Drain to Header
3-MSD-014	8	9321-F-20233 Sheet 1	M		PEPSE	RHD-01.3A_2 TK 32A to A HDR: Reheater Drain Tank 32A Drain to Header
3-MSD-015	6	9321-F-20233 Sheet 1	M		PEPSE	RHD-01.10A_2 TK 33A to A HDR: Reheater Drain Tank 33A Drain to Header
3-MSD-016	10	9321-F-20233 Sheet 1	M		PEPSE	RHD-02.8A TK A HDR to FWH 36: Reheater Drain Tank Header Downstream of Reheater 32A and 33A Inlet
3-MSD-017	10	9321-F-20233 Sheet 1, 9321-F-20233 Sheet 2	M		PEPSE	RHD-02.9A TK A HDR to FWH 36: "A" Reheater Drain Tank Header to #36 FWHs
3-MSD-018	8	9321-F-20233 Sheet 2	M		PEPSE	RHD-02.10A TK A HDR to FWH 36: "A" Reheater Drain Tank Header to FWH 36A and 36B
3-MSD-019	6	9321-F-20233 Sheet 2	M		PEPSE	RHD-02.11A A HDR to FWH 36A: "A" Reheater Drain Tank Header to FWH 36A
3-MSD-020	6	9321-F-20233 Sheet 2	M		PEPSE	RHD-02.13A A HDR to FWH 36B: "A" Reheater Drain Tank Header to FWH 36B
3-MSD-021	6	9321-F-20233 Sheet 2	M		PEPSE	RHD-02.15A A HDR to FWH 36C: "A" Reheater Drain Tank Header to FWH 36C
3-MSD-022	6	9321-F-20233 Sheet 2	M		PEPSE	RHD-01.1B_2 TK 31B to B HDR: Reheater Drain Tank 31B Drain to Header

Moisture Separator Reheater Drains (MSD), Unit 3

Section A: CHECWORKS Model Lines

3-MSD-02: Reheater Drains to #36 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-MSD-023	10	9321-F-20233 Sheet 2	M		PEPSE	RHD-01.3B_2 TK 32B to B HDR: Reheater Drain Tank 32B Drain to Header
3-MSD-024	6	9321-F-20233 Sheet 2	M		PEPSE	RHD-01.10B_2 TK 33B to B HDR: Reheater Drain Tank 33B Drain to Header
3-MSD-025	8	9321-F-20233 Sheet 2	M		PEPSE	RHD-02.7B TK B HDR to FWH 36: Reheater Drain Tank Header Downstream of Reheater 31B and 33B Inlet
3-MSD-026	10	9321-F-20233 Sheet 2	M		PEPSE	RHD-02.8B TK B HDR to FWH 36: "B" Reheater Drain Tank Header to #36 FWHs
3-MSD-027	10	9321-F-20233 Sheet 2	M		PEPSE	RHD-02.9B TK B HDR to FWH 36: "B" Reheater Drain Tank Header to FWH 36A and 36B
3-MSD-028	6	9321-F-20233 Sheet 2	M		PEPSE	RHD-02.10B B HDR to FWH 36A: "B" Reheater Drain Tank Header to FWH 36A
3-MSD-029	6	9321-F-20233 Sheet 2	M		PEPSE	RHD-02.12B B HDR to FWH 36B: "B" Reheater Drain Tank Header to FWH 36B
3-MSD-030	6	9321-F-20233 Sheet 2	M		PEPSE	RHD-02.14B B HDR to FWH 36C: "B" Reheater Drain Tank Header to FWH 36C

Moisture Separator Reheater Drains (MSD), Unit 3

Section B: SNM Program Lines

3-MSD-01: Moisture Separator Drains to the Heater Drain Tank

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MSD-073	2.5	9321-F-20233 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	MS Drain Tank 31A vent to MSR
3-MSD-074	2.5	9321-F-20233 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	MS Drain Tank 32A vent to MSR
3-MSD-075	2.5	9321-F-20233 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	MS Drain Tank 33A vent to MSR
3-MSD-076	2.5	9321-F-20233 Sheet 2	S	NC	Operating conditions unknown.	PEPSE	MS Drain Tank 31B vent to MSR
3-MSD-077	2.5	9321-F-20233 Sheet 2	S	NC	Operating conditions unknown.	PEPSE	MS Drain Tank 32B vent to MSR
3-MSD-078	2.5	9321-F-20233 Sheet 2	S	NC	Operating conditions unknown.	PEPSE	MS Drain Tank 33B vent to MSR
3-MSD-079-A	8	9321-F-20233 Sheet 1	S	NL	The nozzle is the only susceptible component in the line.	SFA Model	MSD-01.4A TK 31A to HD TK: MS Drain Tank 31A Drain Header
3-MSD-080-A	8	9321-F-20233 Sheet 1	S	NL	The nozzle is the only susceptible component in this line.	SFA Model	MSD-01.9A TK 32A to HD TK: MS Drain Tank 32A Drain Nozzle
3-MSD-081-A	8	9321-F-20233 Sheet 1	S	NL	The nozzle is the only susceptible component in this line.	SFA Model	MSD-01.14A TK 33A to HD TK: MS Drain Tank 33A Drain Nozzle
3-MSD-082-A	8	9321-F-20233 Sheet 2	S	NL	The nozzle is the only susceptible component in this line.	SFA Model	MSD-01.4B TK 31B to HD TK: MS Drain Tank 31B Drain Nozzle
3-MSD-083-A	8	9321-F-20233 Sheet 2	S	NL	The nozzle is the only susceptible component in this line.	SFA Model	MSD-01.9B TK 32B to HD TK: MS Drain Tank 32B Drain Nozzle
3-MSD-084-A	8	9321-F-20233 Sheet 2	S	NL	The nozzle is the only susceptible component in this line.	SFA Model	MSD-01.14B TK 33B to HD TK: MS Drain Tank 33B Drain Nozzle
3-MSD-085-B	6	9321-F-20233 Sheet 1	S	NL	The nozzle is the only susceptible component in this line.	SFA Model	MSD-01.4A TK 31A to HD TK: MS Drain Tank 31A Drain Nozzle to Heater Drain Tank
3-MSD-086-B	6	9321-F-20233 Sheet 1	S	NL	The nozzle is the only susceptible component in this line.	SFA Model	MSD-01.9A TK 32A to HD TK: MS Drain Tank 32A Drain Nozzle to Heater Drain Tank

Moisture Separator Reheater Drains (MSD), Unit 3

Section B: SNM Program Lines

3-MSD-01: Moisture Separator Drains to the Heater Drain Tank

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MSD-087-B	6	9321-F-20233 Sheet 1	S	NL	The nozzle is the only susceptible component in this line.	SFA Model	MSD-01.14A TK 33A to HD TK: MS Drain Tank 33A Drain Nozzle to Heater Drain Tank
3-MSD-088	6	9321-F-20233 Sheet 2, 9321-F-20233 Sheet 1	S	NL	FAC susceptibility is localized in only a few components in this line.	SFA Model	MSD-01.4B TK 31B to HD TK: MS Drain Tank 31B Drain to Heater Drain Tank
3-MSD-089	6	9321-F-20233 Sheet 2, 9321-F-20233 Sheet 1	S	NL	FAC susceptibility is localized in only a few components in this line.	SFA Model	MSD-01.9B TK 32B to HD TK: MS Drain Tank 32B Drain to Heater Drain Tank
3-MSD-090	6	9321-F-20233 Sheet 2, 9321-F-20233 Sheet 1	S	NL	FAC susceptibility is localized in only a few components in this line.	SFA Model	MSD-01.14B TK 33B to HD TK: MS Drain Tank 33B Drain to Heater Drain Tank

3-MSD-02: Reheater Drains to #36 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MSD-001	2.5	9321-F-20233 Sheet 1	S	NC	Operating conditions unknown.	P&ID	Reheater Drain Tank 31A Vent to MSR
3-MSD-002	2.5	9321-F-20233 Sheet 1	S	NC	Operating conditions unknown.	P&ID	Reheater Drain Tank 32A Vent to MSR
3-MSD-003	2.5	9321-F-20233 Sheet 1	S	NC	Operating conditions unknown.	P&ID	Reheater Drain Tank 33A Vent to MSR
3-MSD-004	2.5	9321-F-20233 Sheet 2	S	NC	Operating conditions unknown.	P&ID	Reheater Drain Tank 31B Vent to MSR
3-MSD-005	2.5	9321-F-20233 Sheet 2	S	NC	Operating conditions unknown.	P&ID	Reheater Drain Tank 32B Vent to MSR
3-MSD-006	2.5	9321-F-20233 Sheet 2	S	NC	Operating conditions unknown.	P&ID	Reheater Drain Tank 33B Vent to MSR
3-MSD-031	6	9321-F-20233 Sheet 1	S	NC	Operating conditions unknown.	P&ID	Reheater 31A to Condenser 33

Moisture Separator Reheater Drains (MSD), Unit 3

Section B: SNM Program Lines

3-MSD-02: Reheater Drains to #36 Feedwater Heaters

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MSD-032	6	9321-F-20233 Sheet 1	S	NC	Operating conditions unknown.	P&ID	Reheater 32A to Condenser 32
3-MSD-033	8	9321-F-20233 Sheet 1	S	NC	Operating conditions unknown.	P&ID	Reheater 33A to Condenser 33
3-MSD-034	6	9321-F-20233 Sheet 2	S	NC	Operating conditions unknown.	P&ID	Reheater 31B to Condenser 31
3-MSD-035	6	9321-F-20233 Sheet 2	S	NC	Operating conditions unknown.	P&ID	Reheater 32B to Condenser 32
3-MSD-036	6	9321-F-20233 Sheet 2	S	NC	Operating conditions unknown.	P&ID	Reheater 33B to Condenser 31

Section C: Excluded Lines

3-MSD-01: Moisture Separator Drains to the Heater Drain Tank

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-MSD-079-B	8	9321-F-20233 Sheet 1	E	EM	This line has been replaced with CrMo.	SFA Model	MSD-01.4A TK 31A to HD TK: MS Drain Tank 31A Drain Header
3-MSD-080-B	8	9321-F-20233 Sheet 1	E	EM	This line has been replaced with CrMo.	SFA Model	MSD-01.9A TK 32A to HD TK: MS Drain Tank 32A Drain Header
3-MSD-081-B	8	9321-F-20233 Sheet 1	E	EM	This line has been replaced with CrMo.	SFA Model	MSD-01.14A TK 33A to HD TK: MS Drain Tank 33A Drain Header
3-MSD-082-B	8	9321-F-20233 Sheet 2	E	EM	This line has been replaced with CrMo.	SFA Model	MSD-01.4B TK 31B to HD TK: MS Drain Tank 31B Drain Header
3-MSD-083-B	8	9321-F-20233 Sheet 2	E	EM	This line has been replaced with CrMo.	SFA Model	MSD-01.9B TK 32B to HD TK: MS Drain Tank 32B Drain Header
3-MSD-084-B	8	9321-F-20233 Sheet 2	E	EM	This line has been replaced with CrMo.	SFA Model	MSD-01.14B TK 33B to HD TK: MS Drain Tank 33B Drain Header
3-MSD-085-A	6	9321-F-20233 Sheet 1	E	EM	This line has been replaced with CrMo.	SFA Model	MSD-01.4A TK 31A to HD TK: MS Drain Tank 31A Drain to Heater Drain Tank

Moisture Separator Reheater Drains (MSD), Unit 3

Section C: Excluded Lines

3-MSD-01: Moisture Separator Drains to the Heater Drain Tank

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-MSD-086-A	6	9321-F-20233 Sheet 1	E	EM	This line has been replaced with CrMo.	SFA Model	MSD-01.9A TK 32A to HD TK: MS Drain Tank 32A Drain to Heater Drain Tank
3-MSD-087-A	6	9321-F-20233 Sheet 1	E	EM	This line has been replaced with CrMo.	SFA Model	MSD-01.14A TK 33A to HD TK: MS Drain Tank 33A Drain to Heater Drain Tank
3-MSD-091	6	9321-F-20233 Sheet 1	E	EI	Line only operates during startup, shutdown, and high-level conditions.	System Description 18.0, Rev. 5, pg. 23	MS Drain Tank 31A Drain to Drains Collecting Tank
3-MSD-092	6	9321-F-20233 Sheet 1	E	EI	Line only operates during startup, shutdown, and high-level conditions.	System Description 18.0, Rev. 5, pg. 23	MS Drain Tank 32A Drain to Drains Collecting Tank
3-MSD-093	6	9321-F-20233 Sheet 1	E	EI	Line only operates during startup, shutdown, and high-level conditions.	System Description 18.0, Rev. 5, pg. 23	MS Drain Tank 33A Drain to Drains Collecting Tank
3-MSD-094	6	9321-F-20233 Sheet 2	E	EI	Line only operates during startup, shutdown, and high-level conditions.	System Description 18.0, Rev. 5, pg. 23	MS Drain Tank 31B Drain to Drains Collecting Tank
3-MSD-095	6	9321-F-20233 Sheet 2	E	EI	Line only operates during startup, shutdown, and high-level conditions.	System Description 18.0, Rev. 5, pg. 23	MS Drain Tank 32B Drain to Drains Collecting Tank
3-MSD-096	6	9321-F-20233 Sheet 2	E	EI	Line only operates during startup, shutdown, and high-level conditions.	System Description 18.0, Rev. 5, pg. 23	MS Drain Tank 33B Drain to Drains Collecting Tank

Main Steam Traps (MST), Unit 3

Section B: SNM Program Lines

3-MST-01: Main Steam lines surrounding Main Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MST-085-A	1.5	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main steam to MST-1
3-MST-085-B	1.5	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-1 to Steam Trap Header
3-MST-086-A	1.5	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main steam to MST-2
3-MST-086-B	1.5	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-2 to Steam Trap Header
3-MST-087-A	1.5	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main steam to MST-3
3-MST-087-B	1.5	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-3 to Steam Trap Header
3-MST-088-A	1.5	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam from Drain Pot to MST-4
3-MST-088-B	1	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam from MS-1-34 US Leakoff to MST-4.
3-MST-088-C	1.5	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-4 to Steam Trap Header
3-MST-089-A	1.25	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam from MS-1-31 US Leakoff to MST-5
3-MST-089-B	1.25	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-5 to Steam Trap Header
3-MST-090-A	1	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam from MS-1-31 US Leakoff to MST-6
3-MST-090-B	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-6 to Steam Trap Header
3-MST-091-A	1	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam from MS-2-31 DS Leakoff to MST-8
3-MST-091-B	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-8 to Steam Trap Header
3-MST-092-A	1	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam from MS-2-32 DS Leakoff to MST-9
3-MST-092-B	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-9 to Steam Trap Header

Main Steam Traps (MST), Unit 3

Section B: SNM Program Lines

3-MST-01: Main Steam lines surrounding Main Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MST-093-A	1	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam from MS-1-32 US Leakoff to MST-10
3-MST-093-B	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-10 to Steam Trap Header
3-MST-094-A	1	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam from MS-1-32 US Leakoff to MST-12
3-MST-094-B	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-12 to Steam Trap Header
3-MST-095-A	1	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam from MS-1-33 US Leakoff to MST-13
3-MST-095-B	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-13 to Steam Trap Header
3-MST-096-A	1	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam from MS-1-33 US Leakoff to MST-14
3-MST-096-B	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-14 to Steam Trap Header
3-MST-097-A	1	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam from MS-2-33 US Leakoff to MST-16
3-MST-097-B	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-16 to Steam Trap Header
3-MST-098-A	1	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam from MS-1-34 US Leakoff to MST-18
3-MST-098-B	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-18 to Steam Trap Header
3-MST-099-A	1	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam from MS-2-34 DS Leakoff to MST-20
3-MST-099-B	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-20 to Steam Trap Header
3-MST-100-A	1.5	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-21
3-MST-100-B	1.5	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-21 to Steam Trap Header
3-MST-101-A	1.5	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-22

Main Steam Traps (MST), Unit 3

Section B: SNM Program Lines

3-MST-01: Main Steam lines surrounding Main Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MST-101-B	1.5	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-22 to Steam Trap Header
3-MST-102-A	1.5	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-23
3-MST-102-B	1.5	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-23 to Steam Trap Header
3-MST-103-A	1	9321-F-20413	S	NS	Pressurized line with flow to steam trap.	PEPSE	Main Steam to MST-24 via Steam Dump Lines
3-MST-103-B	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-24 to Steam Trap Header
3-MST-104-A	1	9321-F-20413	S	NS	Pressurized line with flow to steam trap.	PEPSE	Main Steam to MST-25 via Steam Dump Lines
3-MST-104-B	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-25 to Steam Trap Header
3-MST-105-A	1.25	9321-F-20423	S	NS	Pressurized line with flow to steam trap.	PEPSE	Main Steam to MST-26 via Steam Dump Lines
3-MST-105-B	1.25	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-26 to Steam Trap Header
3-MST-106-A	1	9321-F-20413	S	NS	Pressurized line with flow to steam trap.	PEPSE	Main Steam to MST-27 via Steam Dump Lines
3-MST-106-B	1.25	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-27 to Steam Trap Header
3-MST-107-A	1.25	9321-F-20423	S	NS	Pressurized line with flow to steam trap.	PEPSE	Main Steam to MST-28 via Steam Dump Lines
3-MST-107-B	1.25	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-28 to Steam Trap Header
3-MST-108-A	1.25	9321-F-20423	S	NS	Pressurized line with flow to steam trap.	PEPSE	Main Steam to MST-29 via Steam Dump Lines
3-MST-108-B	1.25	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-29 to Steam Trap Header
3-MST-109-A	1	9321-F-20423	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-30
3-MST-109-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-30 to Steam Trap Header

Main Steam Traps (MST), Unit 3

Section B: SNM Program Lines

3-MST-01: Main Steam lines surrounding Main Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MST-110-A	1	9321-F-20423	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-31
3-MST-110-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-31 to Header
3-MST-110-D	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	Header to Steam Trap Header
3-MST-111-A	1	9321-F-20423	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-32
3-MST-111-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-32 to Steam Trap Header
3-MST-112-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-33 to Steam Trap Header
3-MST-113-A	1.25	9321-F-20423	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-34
3-MST-113-B	1.25	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-34 to Steam Trap Header
3-MST-114-A	1	9321-F-20423	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-35
3-MST-114-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-35 to Steam Trap Header
3-MST-115-A	1	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-36
3-MST-115-B	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-36 to Steam Trap Header
3-MST-116-A	1	9321-F-20423	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-37
3-MST-116-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-37 to Steam Trap Header
3-MST-117-A	1	9321-F-20423	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-38
3-MST-117-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-38 to Steam Trap Header
3-MST-118-A	1	9321-F-20423	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-39
3-MST-118-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-39 to Header
3-MST-118-D	1.25	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	Header to Steam Trap Header
3-MST-119-A	1	9321-F-20423	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-40

Main Steam Traps (MST), Unit 3

Section B: SNM Program Lines

3-MST-01: Main Steam lines surrounding Main Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MST-119-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-40 to Header
3-MST-120-A	1	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-41
3-MST-120-B	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-41 to Header
3-MST-121-A	1.25	9321-F-20423	S	NS	Pressurized line with flow to steam trap.	PEPSE	Main Steam to MST-42 via Steam Dump Lines
3-MST-121-B	1.25	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-42 to Steam Trap Header
3-MST-122-A	1.25	9321-F-20423	S	NS	Pressurized line with flow to steam trap.	PEPSE	Main Steam to MST-43 via Steam Dump Lines
3-MST-122-B	1.25	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-43 to Steam Trap Header
3-MST-123-A	1.25	9321-F-20423	S	NS	Pressurized line with flow to steam trap.	PEPSE	Main Steam to MST-44 via Steam Dump Lines
3-MST-123-B	1.25	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-44 to Steam Trap Header
3-MST-124-A	1.25	9321-F-20423	S	NS	Pressurized line with flow to steam trap.	PEPSE	Main Steam to MST-45 via Steam Dump Lines
3-MST-124-B	1.25	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-45 to Steam Trap Header
3-MST-125-A	1	9321-F-20423	S	NS	Pressurized line with flow to steam trap.	PEPSE	Main Steam to MST-46 via Steam Dump Lines
3-MST-125-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-46 to Steam Trap Header
3-MST-126-A	1	9321-F-20423	S	NS	Pressurized line with flow to steam trap.	PEPSE	Main Steam to MST-47 via Steam Dump Lines
3-MST-126-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-47 to Steam Trap Header
3-MST-127-A	1	9321-F-20423	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-48
3-MST-127-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-48 to Steam Trap Header

Main Steam Traps (MST), Unit 3

Section B: SNM Program Lines

3-MST-01: Main Steam lines surrounding Main Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MST-128-A	1	9321-F-20423	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-49
3-MST-128-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-49 to Steam Trap Header
3-MST-129-A	1	9321-F-20423	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-50
3-MST-129-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-50 to Steam Trap Header
3-MST-130-A	1	9321-F-20423	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-51
3-MST-130-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-51 to Steam Trap Header
3-MST-131-A	1	9321-F-20423	S	NS	High quality main steam line.	PEPSE	Main Steam to MST-52
3-MST-131-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MST-52 to Steam Trap Header
3-MST-132-B	1	9321-F-20423	S	NC	Operating conditions unknown.	PEPSE	MST-56 to Steam Trap Header
3-MST-133-B	1	9321-F-20423	S	NC	Operating conditions unknown.	PEPSE	MST-57 to Steam Trap Header
3-MST-134-B	1	9321-F-20423	S	NC	Operating conditions unknown.	PEPSE	MST-58 to Steam Trap Header
3-MST-135-B	1	9321-F-20423	S	NC	Operating conditions unknown.	PEPSE	MST-59 to Steam Trap Header
3-MST-136-A	1	9321-F-20423	S	NC	Operating conditions unknown.	PEPSE	Steam to MST-60
3-MST-136-B	1	9321-F-20423	S	NC	Operating conditions unknown.	PEPSE	MST-60 to Header
3-MST-137-A	1	9321-F-20423	S	NC	Operating conditions unknown.	PEPSE	Steam to MST-61
3-MST-137-B	1	9321-F-20423	S	NC	Operating conditions unknown.	PEPSE	MST-61 to Steam Trap Header
3-MST-138-A	1	9321-F-20423	S	NC	Operating conditions unknown.	PEPSE	Steam to MST-62
3-MST-138-B	1	9321-F-20423	S	NC	Operating conditions unknown.	PEPSE	MST-62 to Steam Trap Header
3-MST-139-A	1	9321-F-20423	S	NC	Operating conditions unknown.	PEPSE	Steam to MST-63
3-MST-139-B	1	9321-F-20423	S	NC	Operating conditions unknown.	PEPSE	MST-63 to Steam Trap Header

Main Steam Traps (MST), Unit 3

Section B: SNM Program Lines

3-MST-01: Main Steam lines surrounding Main Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-MST-140-A	1	9321-F-20413	S	NS	High quality main steam line.	PEPSE	Steam to MST-64
3-MST-140-B	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-64 to Header
3-MST-140-D	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	Header to Steam Trap Header
3-MST-141-A	1	9321-F-20413	S	NS	Operating conditions unknown.	PEPSE	Steam to MST-65
3-MST-141-B	1	9321-F-20413	S	NS	Operating conditions unknown.	P&ID	MST-65 to Header
3-MST-143-A	1	9321-F-20423	S	NS	High quality main steam line.	PEPSE	Steam to MST-80
3-MST-143-B	1	9321-F-20423	S	NS	Operating conditions unknown.	P&ID	MSt-80 to Steam Trap Header
3-MST-163-A	0.75	9321-F-41573	S	NQ	High quality main steam line.	PEPSE	Main Steam to MST-70
3-MST-163-B	0.75	9321-F-41573	S	NS	Unknown conditions in line	PEPSE	MST-70 to Steam Trap Header

Section C: Excluded Lines

3-MST-01: Main Steam lines surrounding Main Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-MST-085-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-1 Bypass Line
3-MST-086-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-2 Bypass Line
3-MST-087-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-3 Bypass Line
3-MST-088-D		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-4 Bypass Line
3-MST-089-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-5 Bypass Line
3-MST-090-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-6 Bypass Line
3-MST-091-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-8 Bypass Line

Main Steam Traps (MST), Unit 3

Section C: Excluded Lines

3-MST-01: Main Steam lines surrounding Main Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-MST-092-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-9 Bypass Line
3-MST-093-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-10 Bypass Line
3-MST-094-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-12 Bypass Line
3-MST-095-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-13 Bypass Line
3-MST-096-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-14 Bypass Line
3-MST-097-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-16 Bypass Line
3-MST-098-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-18 Bypass Line
3-MST-099-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-20 Bypass Line
3-MST-100-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-21 Bypass Line
3-MST-101-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-22 Bypass Line
3-MST-102-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-23 Bypass Line
3-MST-103-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-24 Bypass Line
3-MST-104-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-25 Bypass Line
3-MST-105-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-26 Bypass Line
3-MST-106-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-27 Bypass Line
3-MST-107-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-28 Bypass Line
3-MST-108-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-29 Bypass Line
3-MST-109-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-30 Bypass Line
3-MST-110-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-31 Bypass Line
3-MST-111-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-32 Bypass Line

Main Steam Traps (MST), Unit 3

Section C: Excluded Lines

3-MST-01: Main Steam lines surrounding Main Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-MST-112-A	1	9321-F-20423	E	EI	Line only operates during startup	P&ID	Steam to MST-33
3-MST-112-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-33 Bypass Line
3-MST-113-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-34 Bypass Line
3-MST-114-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-35 Bypass Line
3-MST-115-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-36 Bypass Line
3-MST-116-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-37 Bypass Line
3-MST-117-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-38 Bypass Line
3-MST-118-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-39 Bypass Line
3-MST-119-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-40 Bypass Line
3-MST-120-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-41 Bypass Line
3-MST-121-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-42 Bypass Line
3-MST-122-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-43 Bypass Line
3-MST-123-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-44 Bypass Line
3-MST-124-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-45 Bypass Line
3-MST-125-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-46 Bypass Line
3-MST-126-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-47 Bypass Line
3-MST-127-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-48 Bypass Line
3-MST-128-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-49 Bypass Line
3-MST-129-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-50 Bypass Line
3-MST-130-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-51 Bypass Line

Main Steam Traps (MST), Unit 3

Section C: Excluded Lines

3-MST-01: Main Steam lines surrounding Main Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-MST-131-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-52 Bypass Line
3-MST-132-A	1	9321-F-20423	E	EI	Line only operates during startup	P&ID	Steam to MST-56
3-MST-132-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-56 Bypass Line
3-MST-133-A	1	9321-F-20423	E	EI	Line only operates during startup	P&ID	Steam to MST-57
3-MST-133-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-57 Bypass Line
3-MST-134-A	1	9321-F-20423	E	EI	Line only operates during startup	P&ID	Steam to MST-58
3-MST-134-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-58 Bypass Line
3-MST-135-A	1	9321-F-20423	E	EI	Line only operates during startup	P&ID	Steam to MST-59
3-MST-135-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-59 Bypass Line
3-MST-136-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-60 Bypass Line
3-MST-137-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-61 Bypass Line
3-MST-138-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-62 Bypass Line
3-MST-139-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-63 Bypass Line
3-MST-140-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-64 Bypass Line
3-MST-141-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-65 Bypass Line
3-MST-142-A	0.75	9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	Steam to MST-79
3-MST-142-B	0.75	9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-79 to Condenser No 33
3-MST-142-C		9321-F-20413	E	EI	Valve shown closed on P&ID.	P&ID	MST-79 Bypass Line
3-MST-143-C		9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	MST-80 Bypass Line
3-MST-165	0.75	9321-F-41573	E	EI	Valve shown closed on P&ID.	P&ID	MST-70 Bypass via MS-266

Main Steam Traps (MST), Unit 3

Section C: Excluded Lines

3-MST-01: Main Steam lines surrounding Main Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-MST-166	3	9321-F-20413, 9321-F-20423	E	EM	Replaced with Chrome-moly	IP3-RPT-MULT-03162, Rev. 3, Appendix B	Main Steam Trap Header
3-MST-167	4	9321-F-20423	E	EM	Replaced with Chrome-moly	IP3-RPT-MULT-03162, Rev. 3, Appendix B	Main Steam Trap Header to connection with 3-MST-169
3-MST-168	2	9321-F-20423	E	EM	Replaced with Chrome-moly	TS-MS-024 Addendum D	Main Steam Traps Header to Main Header
3-MST-169	2	9321-F-20423	E	EM	Replaced with Chrome-moly	TS-MS-024 Addendum D	Main Steam Traps Main Header to Drains Collecting Tank
3-MST-170	4	9321-F-20423	E	EI	Valve shown closed on P&ID.	P&ID	Main Steam Traps Main Header Drain to Discharge Tunnel

Moisture Preseparator Drains (PD), Unit 3

Section A: CHECWORKS Model Lines

3-PD-01: Moisture Preseparator Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Comments	Reference	Line Description
3-PD-032	10	9321-F-20223 Sheet 1	M		PEPSE	PD-01.1 PRESEP 1B DR to HDR: Moisture Preseparator 1B to Separation Chamber header
3-PD-033	10	9321-F-20223 Sheet 1	M		PEPSE	PD-01.3 PRESEP 1A DR to HDR: Moisture Preseparator 1A to Separation Chamber header
3-PD-034	10	9321-F-20223 Sheet 1	M		PEPSE	PD-01.5 PRESEP 2B DR to HDR: Moisture Preseparator 2B to Separation Chamber header
3-PD-035	10	9321-F-20223 Sheet 1	M		PEPSE	PD-01.7 PRESEP 2A DR to HDR: Moisture Preseparator 2A to Separation Chamber header
3-PD-036	16	9321-F-20223 Sheet 1	M		PEPSE	PD-02.2 PRESEP HDR to HD TK: 1A and 1B MPS to Separation Chamber
3-PD-037	16	9321-F-20223 Sheet 1	M		PEPSE	PD-02.3 PRESEP HDR to HD TK: 1A, 1B, and 2A MPS to Separation Chamber
3-PD-038	16	9321-F-20223 Sheet 1	M		PEPSE	PD-02.4 PRESEP HDR to HD TK: Moisture Preseparators to Separation Chamber
3-PD-040	16	9321-F-20223 Sheet 1	M		PEPSE	PD-02.4 PRESEP HDR to HD TK: Separation Chamber to Loop Seal

Moisture Preseparator Drains (PD), Unit 3

Section C: Excluded Lines

3-PD-01: Moisture Preseparator Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-PD-039	3	9321-F-20223 Sheet 1	E	EM	Line was constructed with Chrome-Moly	IP3-RPT-MULT-03162, Rev. 3, Appendix B	Separation Chamber vent to HDT vent line to FWH 35A
3-PD-041	16	9321-F-20223 Sheet 1	E	EI	Valve shown closed on P&ID.	P&ID	PD-02.4 PRESEP HDR to HD TK: Loop Seal to Heater Drain Tank
3-PD-042	1	9321-F-20223 Sheet 1	E	EI	Line operates less than 2% of the time	P&ID	Vent from Loop Seal to Heater Drain Tank

Reheat Steam Traps (RST), Unit 3

Section B: SNM Program Lines

3-RST-02: Reheat Steam from Steam Traps to Boiler Feed Pump Turbine Drip Tank

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-RST-001	0.75	9321-F-20243	S	NC	Operating conditions unknown.	P&ID	RST-1 to BFP Turbine Drip Tank Header
3-RST-002	0.75	9321-F-20243	S	NC	Operating conditions unknown.	P&ID	RST-2 to BFP Turbine Drip Tank Header
3-RST-003	0.75	9321-F-20243	S	NC	Operating conditions unknown.	P&ID	RST-3 to BFP Turbine Drip Tank Header
3-RST-004	2	9321-F-20243	S	NC	Operating conditions unknown.	P&ID	Reheat Steam Trap Header to BFP Turbine Drip Tank

Service Boiler (SB), Unit 3

Section B: SNM Program Lines

3-SB-02: Service Boiler Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-SB-002	10	9321-F-41283	S	NC	Operating conditions unknown.	P&ID	Main Steam Header to Aux Steam line
3-SB-003	10	9321-F-41283	S	NC	Operating conditions unknown.	P&ID	Main Steam Header to Aux Steam line
3-SB-004	10	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Desuperheater
3-SB-006	6	9321-F-41283	S	NC	Operating conditions unknown.	P&ID	Steam from Steam Drum towards Desuperheater
3-SB-008	3	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Condenser Water Box Lifting Jets Air Ejectors and Seal Steam Header
3-SB-016	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam Traps AST26 and AST-3 to Cond Receiver
3-SB-017	4	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam header to Condenser Water Box Lifting Jets Air Ejectors
3-SB-018	3	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Header to Air Ejector # 31
3-SB-019	3	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Header to Air Ejector # 32
3-SB-020	2.5	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Header to AST-5
3-SB-021	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	AST-5 to Cond Receiver Header
3-SB-023	10	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Desuperheater to Air Purge Heating Coils
3-SB-032	0.75	9321-F-41283	S	NC	Operating conditions unknown.	P&ID	Steam Drum drain to House Service Boiler Blowdown tank
3-SB-037	8	9321-F-41283	S	NC	Operating conditions unknown.	P&ID	Steam Drum header to Deaerator, Aux Steam Supply, and Steam Trap assembly

Service Boiler (SB), Unit 3

Section B: SNM Program Lines

3-SB-02: Service Boiler Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-SB-038	3	9321-F-41283, 9321-F-41293	S	NC	Operating conditions unknown.	P&ID	Steam Drum to Deaerator
3-SB-039	8	9321-F-41283	S	NC	Operating conditions unknown.	P&ID	Steam Drum to Aux Steam Supply
3-SB-052	4	9321-F-41283, 9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Aux Boiler Building
3-SB-053	1	9321-F-41283	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Aux Boiler Building through PCV 101
3-SB-055	4	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Upper Boiler Room Steam header to various equipment
3-SB-056	2.5	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam header to Unit Heaters 1 and 2
3-SB-057	2	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 1 thru TCV 221
3-SB-058	1	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 2 thru TCV 222
3-SB-065	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 3 thru TCV 223
3-SB-068	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 4 thru TCV 224
3-SB-072	1.5	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam header to various Unit Heaters
3-SB-073	1	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam header to Unit Heaters 5-7
3-SB-074	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 5
3-SB-075	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 6
3-SB-076	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 7

Service Boiler (SB), Unit 3

Section B: SNM Program Lines

3-SB-02: Service Boiler Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-SB-077	1.5	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 16
3-SB-078	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 17
3-SB-090	1	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam header to Unit Heater 8, 9, and 10
3-SB-091	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 8
3-SB-092	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 9
3-SB-093	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 10
3-SB-101	1.25	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 11, and 13, 15, and 18
3-SB-102	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 11
3-SB-103	1.25	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam header to Unit Heaters
3-SB-104	1	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam header to Unit Heaters 13, 15, and 18
3-SB-105	1	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 14
3-SB-106	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 13
3-SB-107	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 18
3-SB-108	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-UH 15
3-SB-109	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Unit heater Bypass to Condensate Return Tank header
3-SB-116	1.5	9321-F-41563, 9321-F-41293	S	NC	Operating conditions unknown.	P&ID	Condensate Return Tank header
3-SB-122	3	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-HC 1A and 1B
3-SB-123	2.5	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-HC 1A

Service Boiler (SB), Unit 3

Section B: SNM Program Lines

3-SB-02: Service Boiler Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-SB-124	2.5	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam to HSB-HC 1B
3-SB-127	2	9321-F-41563, 9321-F-41293	S	NC	Operating conditions unknown.	P&ID	HSB-HC return header to Condensate Return Tank
3-SB-131	1.5	9321-F-41563, 9321-F-42083	S	NC	Operating conditions unknown.	P&ID	HSB-UH return to Condensate Receiver
3-UHT-050	0.75	9321-F-41283	S	NC	Operating conditions unknown.	P&ID	Steam Trap "D" to Condensate Receiver
3-UHT-050-A	0.75	9321-F-41283	S	NC	Operating conditions unknown.	P&ID	Steam Trap "D" to Condensate Receiver

Section C: Excluded Lines

3-SB-02: Service Boiler Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-SB-001	3	9321-F-41573, 9321-F-40573, 9321-F-41283	E	EQ	Due to pressure drop across PCV 1257 this line is superheated	P&ID	Auxiliary Steam from PCV-1257
3-SB-009	4	9321-F-40573, 9321-F-20173	E	EI	Valve shown closed on P&ID.	P&ID	Aux Steam to Seal Steam Header
3-SB-022	1	9321-F-40573	E	EI	Valve shown closed on P&ID.	P&ID	AST-5 Bypass
3-SB-024	0.75	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	Steam Drum drain to header
3-SB-025	0.75	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	Steam Drum drain to header
3-SB-026	1	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	Steam drum drain header to Service Boiler Blowdown tank
3-SB-027	1	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	Steam Drum drain back to Deaerator thru Steam Trap SBBD-T-1

Service Boiler (SB), Unit 3

Section C: Excluded Lines

3-SB-02: Service Boiler Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-SB-028	1	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	Steam drain drum to Deaerator header
3-SB-029	1	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	Steam drain drum to Deaerator header
3-SB-030	3	9321-F-41283, 9321-F-41293	E	EI	Valve shown closed on P&ID.	P&ID	Drain header from Steam Drum to Deaerator
3-SB-031	0.75	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap SBBD-T-1 Bypass
3-SB-033	8	9321-F-41283	E	EF	Low to no flow in vent to atmosphere	P&ID	Steam Drum vent to roof
3-SB-034	8	9321-F-41283	E	EF	Low to no flow in vent to atmosphere	P&ID	Steam Drum vent to roof
3-SB-035	0.75	9321-F-41283	E	EF	Low to no flow in line	P&ID	Steam drum vent to roof drain
3-SB-036	0.75	9321-F-41283	E	EF	Low to no flow in line	P&ID	Steam drum vent to roof drain
3-SB-040	2	9321-F-41293	E	EI	Valve shown closed on P&ID.	P&ID	PCV 109 Bypass
3-SB-043	1	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	Valve SB-64 Bypass
3-SB-044	1	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	Valve SB-65 Bypass
3-SB-047	8	9321-F-41283	E	EF	Low to no flow in vent to atmosphere	P&ID	House Service Boiler Blowdown Tank vent to the roof
3-SB-048	3	9321-F-41283	E	EF	Low to no flow in line	P&ID	House Service Boiler Blowdown Tank drain to pit
3-SB-049	1	9321-F-41283	E	EF	Low to no flow in line	P&ID	HSBB Tank vent to roof drain to pit
3-SB-054	4	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	Aux Steam to Aux Boiler Building bypassing PCV 1152
3-SB-059	2	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	TCV 221 Bypass
3-SB-128	2.5	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	TCV 27 Bypass

Service Boiler (SB), Unit 3

Section C: Excluded Lines

3-SB-02: Service Boiler Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-SB-132	1	9321-F-41563	E	ET	Temperature of condensate leaving Condensate receiver is below 200 degF	P&ID	Condensate Pump 21 Suction from Condensate Receiver
3-SB-133	1	9321-F-41563	E	ET	Temperature of condensate leaving Condensate receiver is below 200 degF	P&ID	Condensate Pump 22 Suction from Condensate Receiver
3-SB-134	1	9321-F-41563	E	ET	Temperature of condensate leaving Condensate receiver is below 200 degF	P&ID	Condensate Pump 21 to Condensate Return Tank header
3-SB-135	1	9321-F-41563	E	ET	Temperature of condensate leaving Condensate receiver is below 200 degF	P&ID	Condensate Pump 22 to Condensate Return Tank header
3-UHT-051	0.75	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap "D" Bypass
3-UHT-051-A	0.75	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap "D" Bypass

Service Boiler Feed Pump (SBF), Unit 3

Section B: SNM Program Lines

3-SBF-01: Service Boiler lines from Deaerator to Steam Drum thru Service Boiler Feed Pumps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-SBF-006	1	9321-F-41293	S	NC	Operating conditions unknown.	P&ID	Service Boiler Feed Pump 31 Low Flow Recirc line
3-SBF-007	1	9321-F-41293	S	NC	Operating conditions unknown.	P&ID	Service Boiler Feed Pump 32 Low Flow Recirc line

Section C: Excluded Lines

3-SBF-01: Service Boiler lines from Deaerator to Steam Drum thru Service Boiler Feed Pumps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-SBF-001	6	9321-F-41293	E	ET	Temperature does not exceed 200 degF	PEPSE	Deaerator to Service Boiler Feed Pumps Suction header
3-SBF-002	4	9321-F-41293	E	ET	Temperature does not exceed 200 degF	PEPSE	Suction for Service Boiler Feed Pump 31
3-SBF-003	4	9321-F-41293	E	ET	Temperature does not exceed 200 degF	PEPSE	Suction for Service Boiler Feed Pump 32
3-SBF-004	4	9321-F-41293	E	ET	Temperature does not exceed 200 degF	PEPSE	Service Boiler Feed Pump 31 to header
3-SBF-005	4	9321-F-41293	E	ET	Temperature does not exceed 200 degF	PEPSE	Service Boiler Feed Pump 32 to header
3-SBF-008	4	9321-F-41293, 9321-F-41283	E	ET	Temperature does not exceed 200 degF	PEPSE	Service Boiler Feed Pumps header to Steam Drum
3-SBF-009	1	9321-F-41293	E	EI	Valve shown closed on P&ID.	P&ID	Deaerator Recirc line
3-SBF-010	3	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	LCV 2031 Bypass
3-SBF-011	0.75	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	Boiler Feed Pump drain to Service Boiler Blowdown Tank

Condensate Return Unit Heaters to Service Boiler D (UH), Unit 3

Section B: SNM Program Lines

3-UH-01: Auxiliary Steam Lines to Various Equipment

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-UH-001	10	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Air Purge Heating Coils
3-UH-003	0.75	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	AST-30 to Cond. Receiver Header
3-UH-005	2.5	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Header to Dirty and Clean oil Tanks
3-UH-006	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Dirty and Clean Oil Tanks
3-UH-008	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Oil Tanks through PCV 1291
3-UH-009	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	PCV 1291 Bypass
3-UH-010	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Header to Oil Tanks
3-UH-011	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Dirty Oil Tank
3-UH-012	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Clean Oil Tank
3-UH-015	1.5	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	header from Oil tanks to waste drain
3-UH-018	8	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Desuperheater outlet header to various unit heaters
3-UH-060	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Unit Heater header to Cond Receiver
3-UH-061	4	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Unit Heater header to Cond Receiver
3-UH-062	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Unit Heater header to Cond Receiver
3-UH-063	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Unit Heater header to Cond Receiver
3-UH-076	10	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam header to Air Purge heating Coils and Air Temp Units
3-UH-077	6	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam header to Air Purge heating Coils and Air Temp Units
3-UH-078	4	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Header to Air Purge Heating Coils

Condensate Return Unit Heaters to Service Boiler D (UH), Unit 3

Section B: SNM Program Lines

3-UH-01: Auxiliary Steam Lines to Various Equipment

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-UH-079	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam through valve UH-129-1 to Air Purge heating Coil
3-UH-080	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam through valve UH-129-2 to Air Purge heating Coil
3-UH-085	3	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Air Purge Heating Coil Unit Heater header to Cond Receiver
3-UH-086	3	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Fuel Storage Building Cond Receiver header
3-UH-087	3	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Air Temp Unit # 32
3-UH-088	3	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Air Temp Unit # 31
3-UH-089	1.5	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Steam from Air Temp Unit #32
3-UH-090	1.5	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Steam from Air Temp Unit # 31
3-UH-096	10	9321-F-40573, 9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam header to Primary Auxiliary building
3-UH-098	2	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UHT-563
3-UH-102	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UHT-2-4
3-UH-103	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam from Unit Heaters to Cond Receiver Header
3-UH-106	6	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to various equipment
3-UH-107	4	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam header to Unit Heaters
3-UH-108	4	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam header to Unit Heaters and Water Storage Tanks
3-UH-109	2	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Unit heaters and Batching Mix Tank

Condensate Return Unit Heaters to Service Boiler D (UH), Unit 3

Section B: SNM Program Lines

3-UH-01: Auxiliary Steam Lines to Various Equipment

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-UH-110	3	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Air Heating Coils
3-UH-111	4	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Air Temp Unit and Steam Heating Coils
3-UH-112	6	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Refueling Water Storage Tank
3-UH-113	2	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam header to Primary Water Storage Tank No. 31
3-UH-114	4	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam from Refueling Water Storage Tank
3-UH-119	2	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Batching Mix Tank
3-UH-121	0.75	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam from Batching Mix Tank
3-UH-148	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam from Steam Traps to Cond Receiver Header
3-UH-149	4	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam header from Steam Traps to Cond Receiver Header
3-UH-153	2	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Air Temp Unit
3-UH-155	3	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Air Heating Coils thru valve UH 114-1
3-UH-156	3	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Air Heating Coils thru valve UH 114-2
3-UH-157	3	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Air Heating Coils thru valve UH 114-3
3-UH-158	3	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Header to Air Heating Coils
3-UH-159	2	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Air Heating Coil 31
3-UH-160	2	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Air Heating Coil 32

Condensate Return Unit Heaters to Service Boiler D (UH), Unit 3

Section B: SNM Program Lines

3-UH-01: Auxiliary Steam Lines to Various Equipment

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-UH-161	2	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Air Heating Coil 33
3-UH-162	0.75	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru UHT-731 to Air Heating Coil return lines
3-UH-163	1.5	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam from Air Heating Coil 31 upstream of valve UH-723
3-UH-164	1.5	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam from Air Heating Coil 32 upstream of valve UH-725
3-UH-165	1.5	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam from Air Heating Coil 33 upstream of valve UH-727
3-UH-169	0.5	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Thermostatic Air Vent UH-126 to Condensate Receiver Pit
3-UH-170	0.5	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Thermostatic Air Vent UH-749 to Condensate Receiver Pit
3-UH-171	0.5	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Thermostatic Air Vent UH-750 to Condensate Receiver Pit
3-UH-172	1.5	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Header to Cond Receiver IP3V-138-0001
3-UH-173	4	9321-F-27273, 9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Steam Heating Coils in Radioactive Machine Shop
3-UH-177	2	9321-F-40573, 9321-F-80793	S	NC	Operating conditions unknown.	P&ID	Aux Steam Supply to Outage Support Building
3-UH-178	1	9321-F-80793, 9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Condensate Return from Outage Support Building
3-UH-183	6	9321-F-40573, 9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aus Steam to Administration Service Building

Condensate Return Unit Heaters to Service Boiler D (UH), Unit 3

Section B: SNM Program Lines

3-UH-01: Auxiliary Steam Lines to Various Equipment

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-UH-184	2.5	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Heat Exchanger and Steam Trap assembly
3-UH-185	4	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Hot Water Heater and Steam Trap assembly
3-UH-186	1.5	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Humidifiers and steam trap assemblies
3-UH-187	6	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Heat Exchanger AS HX-1
3-UH-190	2	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Heat Exchanger AS HX-2
3-UH-192	1.5	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Humidifier AS HU-1
3-UH-194	1.5	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Humidifier AS HU-2
3-UH-196	4	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam to Hot Water Heater
3-UH-211	4	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Header to Cond Receiver
3-UH-220	1	9321-F-41293	S	NC	Operating conditions unknown.	P&ID	Condensate Transfer Pump 31 Low Flow Recirc line
3-UH-221	1	9321-F-41293	S	NC	Operating conditions unknown.	P&ID	Condensate Transfer Pump 32 Low Flow Recirc line
3-UH-236	2	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam from Refueling Water Storage Tank to Cond. Receiver
3-UH-237	2.5	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Unit Heater header to Cond Receiver
3-UH-238	2.5	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Unit Heater header to Cond Receiver
3-UH-239	3	9321-F-41293	S	NC	Aux Steam from Steam Trap UH-T-303 dumps into this line making it susceptible	P&ID	Aux Steam from Deaerator Overflow Trap to House Service Boiler

Condensate Return Unit Heaters to Service Boiler D (UH), Unit 3

Section C: Excluded Lines

3-UH-01: Auxiliary Steam Lines to Various Equipment

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-UH-017	1	9321-F-40573	E	EF	Low to no flow in line	P&ID	Drain to Trench
3-UH-019	10	9321-F-40573	E	EF	Low to no flow in line	P&ID	Aux Steam vent to atmosphere
3-UH-020	1	9321-F-40573	E	EF	Low to no flow in line	P&ID	Aux Steam drain to waste
3-UH-116	4	9321-F-27273	E	EI	Valve shown closed on P&ID.	P&ID	TCV-1116 Bypass
3-UH-117	1.5	9321-F-27273	E	EI	Valve shown closed on P&ID.	P&ID	TCV-1115 Bypass
3-UH-118	4	9321-F-27273	E	EI	Valve shown closed on P&ID.	P&ID	PCV-1250 Bypass
3-UH-120	2	9321-F-27273	E	EI	Valve shown closed on P&ID.	P&ID	PCV-1251 Bypass
3-UH-150	0.5	9321-F-27273	E	ET	Temperature in line does not exceed 200 degF	PEPSE	Cond Receiver IP3V-138-0002 to Cond Receiver IP3V-138-0001 thru Pump 33A
3-UH-151	0.5	9321-F-27273	E	ET	Temperature in line does not exceed 200 degF	PEPSE	Cond Receiver IP3V-138-0002 to Cond Receiver IP3V-138-0001 thru Pump 33B
3-UH-152	1.5	9321-F-27273	E	ET	Temperature in line does not exceed 200 degF	PEPSE	Header to Cond Receiver IP3V-138-0001
3-UH-154	2	9321-F-27273	E	EI	Valve shown closed on P&ID.	P&ID	Aux Steam return from Air Temp Unit
3-UH-175	3	9321-F-27273, 9321-F-40573	E	ET	Temperature in line does not exceed 200 degF	PEPSE	Cond Receiver to House Service Boiler Cond Receiver Tank
3-UH-176	0.5	9321-F-27273	E	ET	Temperature in line does not exceed 200 degF	PEPSE	Aux Steam to Radiation Monitor
3-UH-179	6	9321-F-40573	E	ET	Temperature does not exceed 200 degF	PEPSE	Cond Receiver to House Service Boiler Condensate Return Tank
3-UH-180	3	9321-F-40573	E	ET	Temperature does not exceed 200 degF	PEPSE	Cond Receiver to House Service Boiler Condensate Return Tank through pump 32

Condensate Return Unit Heaters to Service Boiler D (UH), Unit 3

Section C: Excluded Lines

3-UH-01: Auxiliary Steam Lines to Various Equipment

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-UH-181	3	9321-F-40573	E	ET	Temperature does not exceed 200 degF	PEPSE	Cond Receiver to House Service Boiler Condensate Return Tank through pump 31
3-UH-182	4	9321-F-40573, 9321-F-41293	E	ET	Temperature does not exceed 200 degF	PEPSE	Header to House Service Boiler Condensate Return Tank
3-UH-203	1.25	9321-F-41553	E	EI	Valve shown closed on P&ID.	P&ID	PCV 2052 Bypass
3-UH-204	1.5	9321-F-41553	E	EI	Valve shown closed on P&ID.	P&ID	TCV 1206 Bypass
3-UH-205	3	9321-F-41553	E	EI	Valve shown closed on P&ID.	P&ID	TCV 675 Bypass
3-UH-208	4	9321-F-41553	E	EI	Valve shown closed on P&ID.	P&ID	TCV 1300 Bypass
3-UH-212	2	9321-F-41553	E	EF	Low to no flow in line	PEPSE	Cond Receiver Vent
3-UH-213	2.5	9321-F-41553	E	ET	Temperature does not exceed 200 degF	PEPSE	Cond Receiver to House Service Boiler Condensate Return Tank
3-UH-214	2.5	9321-F-41553	E	ET	Temperature does not exceed 200 degF	PEPSE	Cond Receiver to House Service Boiler Condensate Return Tank
3-UH-215	2.5	9321-F-41553, 9321-F-41293	E	ET	Temperature does not exceed 200 degF	PEPSE	Cond Receiver header to House Service Boiler Condensate Return Tank
3-UH-216	6	9321-F-41293	E	ET	Temperature does not exceed 200 degF	PEPSE	Service Boiler Condensate Transfer Pump 31 Suction
3-UH-217	6	9321-F-41293	E	ET	Temperature does not exceed 200 degF	PEPSE	Service Boiler Condensate Transfer Pump 32 Suction
3-UH-218	4	9321-F-41293	E	ET	Temperature does not exceed 200 degF	PEPSE	Condensate Transfer Pump 31 to Deaerator header
3-UH-219	4	9321-F-41293	E	ET	Temperature does not exceed 200 degF	PEPSE	Condensate Transfer Pump 32 to Deaerator header

Condensate Return Unit Heaters to Service Boiler D (UH), Unit 3

Section C: Excluded Lines

3-UH-01: Auxiliary Steam Lines to Various Equipment

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-UH-222	4	9321-F-41293	E	ET	Temperature does not exceed 200 degF	PEPSE	Condensate Transfer Pump header to deaerator
3-UH-223	3	9321-F-41293	E	EF	Low to no flow in line	P&ID	Service Boiler overflow drain
3-UH-224	2	9321-F-41293	E	EI	Valve shown closed on P&ID.	P&ID	Service Boiler drain
3-UH-225	2	9321-F-41293	E	EI	Valve shown closed on P&ID.	P&ID	Service Boiler drain
3-UH-226	3	9321-F-41293	E	EF	Low to no flow in line	P&ID	Service Boiler vent to roof
3-UH-227	2.5	9321-F-41293	E	EI	Valve shown closed on P&ID.	P&ID	Valve UH-319 Bypass
3-UH-230	4	9321-F-41293	E	EF	Low to no flow in line	P&ID	Deaerator vent to roof/drain
3-UH-231	1	9321-F-41293	E	EF	Low to no flow in line	P&ID	Deaerator vent to roof
3-UH-232	1	9321-F-41293	E	EI	Valve shown closed on P&ID.	P&ID	Deaerator vent to roof - orifice bypass
3-UH-233	4	9321-F-41293	E	EI	Infrequent use of overflow line	P&ID	Deaerator overflow drain to Service Boiler Condensate Return Tank
3-UH-234	0.38	9321-F-41293	E	EM	Replaced with Chrome-moly	IP3-RPT-MULT-03162	Deaerator overflow trap return to deaerator
3-UH-235	1	9321-F-27273	E	EM	Piping is copper	P&ID	Air Heating Coils to Condensate Receiver Pit

Condensate Return Unit Heater Steam Traps (UHT), Unit 3

Section B: SNM Program Lines

3-UHT-01: Auxiliary Steam to Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-UHT-007-A	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to trap UH-T-2-19
3-UHT-007-B	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Trap UH-T-2-19 to Cond. Receiver Header
3-UHT-008	1.5	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap and valve UH-469 to Cond Receiver header
3-UHT-009	0.75	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-408-5 to Cond Receiver header
3-UHT-010	0.75	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-409-5 to Cond Receiver header
3-UHT-011	0.75	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-408-4 to Cond Receiver header
3-UHT-012	1	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-408-6 to Cond Receiver header
3-UHT-013	0.75	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-408-9 to Cond Receiver header
3-UHT-013-A	0.75	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Clean Oil Tank drain to trap UH-T-1-28
3-UHT-013-B	0.75	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Trap UH-T-1-28 to waste header
3-UHT-014	0.75	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-408-7 to Cond Receiver header
3-UHT-014-A	0.75	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Dirty Oil drain to trap UH-T-1-29
3-UHT-014-B	0.75	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Trap UH-T-1-29 to waste header
3-UHT-015	0.75	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-408-8 to Cond Receiver header

Condensate Return Unit Heater Steam Traps (UHT), Unit 3

Section B: SNM Program Lines

3-UHT-01: Auxiliary Steam to Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-UHT-016	0.75	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-408-2 to Cond Receiver header
3-UHT-016-A	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to trap UH-T-2-18
3-UHT-016-B	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Trap UH-T-2-18 to Cond. Receiver Header
3-UHT-017	0.75	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-407-2 to Cond Receiver header
3-UHT-018	1	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam from RS-UH-1 thru steam trap UH-T-397 to Cond Receiver header
3-UHT-019	1	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam from RS-HC-2 thru steam trap UH-T-409-2 to Cond Receiver header
3-UHT-020	1.25	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam from RS-HC-4 thru steam trap UH-T-409-4 to Cond Receiver header
3-UHT-021	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-589
3-UHT-021-A	1.25	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam from RS-HC-3 thru steam trap UH-T-409-3 to Cond Receiver header
3-UHT-022	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-1
3-UHT-022-A	1.25	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam from RS-HC-1 thru steam trap UH-T-409-1 to Cond Receiver header
3-UHT-023	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-2
3-UHT-023-A	0.75	9321-F-41443	S	NC	Operating conditions unknown.	P&ID	Aux Steam from RS-HX-1 thru steam trap UH-T-408-3 to Cond Receiver header

Condensate Return Unit Heater Steam Traps (UHT), Unit 3

Section B: SNM Program Lines

3-UHT-01: Auxiliary Steam to Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-UHT-024	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-3
3-UHT-025	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-4
3-UHT-026	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-5
3-UHT-027	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-2-17
3-UHT-028	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-25
3-UHT-029	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-26
3-UHT-030	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-27
3-UHT-031	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-24
3-UHT-032	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-22
3-UHT-033	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-23
3-UHT-034	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-2-28
3-UHT-035	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-21
3-UHT-036	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-20
3-UHT-037	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-2-27
3-UHT-038	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-19
3-UHT-039	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-18
3-UHT-040	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-2-25
3-UHT-041	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-17
3-UHT-041-A	1	9321-F-41293	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-26 to Deaerator overflow drain
3-UHT-042	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-30

Condensate Return Unit Heater Steam Traps (UHT), Unit 3

Section B: SNM Program Lines

3-UHT-01: Auxiliary Steam to Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-UHT-043	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-11
3-UHT-044	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-10
3-UHT-045	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-7
3-UHT-045-A	1	9321-F-41283, 9321-F-41293	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-303 to House Service Boiler Condensate Return Tank header
3-UHT-046	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-6
3-UHT-047	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-2-22
3-UHT-048	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-8
3-UHT-049	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-9
3-UHT-052	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-12
3-UHT-053	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-13
3-UHT-054	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-14
3-UHT-055	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-15
3-UHT-056	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-2-23
3-UHT-057	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-1-16
3-UHT-058	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-2-26
3-UHT-059	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-2-29
3-UHT-060	1.5	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH 1 Steam to Condensate Receiver thru Steam Trap UH-T-597-1

Condensate Return Unit Heater Steam Traps (UHT), Unit 3

Section B: SNM Program Lines

3-UHT-01: Auxiliary Steam to Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-UHT-061	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH 2 Steam to Condensate Receiver thru Steam Trap UH-T-599-1
3-UHT-062	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH 1 and 2 thru Steam Trap UH-T-601 to Condensate receiver
3-UHT-064	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-7-1
3-UHT-065	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-7-2
3-UHT-066	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-8-1
3-UHT-066-A	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam from HSB-UH 3 thru Steam Trap UH-T-599-2 to House Service Boiler Condensate Return Tank
3-UHT-067	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam header to Unit Heaters
3-UHT-068	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-7-8
3-UHT-069	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-7-7
3-UHT-069-A	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam from HSB-UH 4 thru Steam Trap UH-T-599-3 to House Service Boiler Condensate Return Tank
3-UHT-070	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-7-6
3-UHT-071	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-7-5
3-UHT-071-A	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH 4 to House Service Boiler Condensate Return tank thru Steam Trap UH-T-599-17
3-UHT-072	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-7-4
3-UHT-073	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-7-3

Condensate Return Unit Heater Steam Traps (UHT), Unit 3

Section B: SNM Program Lines

3-UHT-01: Auxiliary Steam to Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-UHT-074	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-8-2
3-UHT-075	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-8-3
3-UHT-079	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH 5-7, 16 and 17 thru UH-T-600 to Condensate Receiver
3-UHT-080	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH 5 thru UH-T-599-4 to Condensate Receiver
3-UHT-081	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-9-3
3-UHT-081-A	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH 6 thru UH-T-599-5 to Condensate Receiver
3-UHT-082	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-9-4
3-UHT-082-A	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH 7 thru UH-T-599-6 to Condensate Receiver
3-UHT-083-A	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH 16 thru UH-T-598-1 to Condensate Receiver
3-UHT-084-A	1	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH 17 thru UH-T-599-14 to Condensate Receiver
3-UHT-091	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-3-2
3-UHT-092	2	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-3-1
3-UHT-093	1.5	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-6-1
3-UHT-094	0.75	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-2-2
3-UHT-094-A	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH 8-10 thru UH-T-599-18 to Condensate Receiver
3-UHT-095	1	9321-F-40573	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-3-2

Condensate Return Unit Heater Steam Traps (UHT), Unit 3

Section B: SNM Program Lines

3-UHT-01: Auxiliary Steam to Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-UHT-095-A	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH-8 thru UH-T-599-7 to Condensate receiver
3-UHT-096	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH-9 thru UH-T-599-8 to Condensate receiver
3-UHT-097	2	9321-F-40573, 9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UH-T-2-11
3-UHT-097-A	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH-10 thru UH-T-599-9 to Condensate receiver
3-UHT-098	8	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam header to Unit Heaters
3-UHT-100	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UHT-2-15
3-UHT-101	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UHT-6-2
3-UHT-110	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Unit Heater thru Steam Trap UH-T-599-20 to Condensate Return Tank header
3-UHT-111	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH 11 thru Steam Trap UH-T-599-10 to Condensate Return Tank header
3-UHT-112	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH-14 thru Steam Trap UH-T-599-12 to Condensate Return Tank header
3-UHT-113	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH 13 thru Steam Trap UH-T-599-11 to Condensate Return Tank header
3-UHT-114	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH 18 thru UH-T-599-15 to Condensate Return Tank header
3-UHT-115	0.75	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	HSB-UH 15 thru Steam Trap UH-T-599-13 to Condensate Return Tank header

Condensate Return Unit Heater Steam Traps (UHT), Unit 3

Section B: SNM Program Lines

3-UHT-01: Auxiliary Steam to Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-UHT-124	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UHT-2-7
3-UHT-125	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UHT-2-14
3-UHT-125-A	2	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam from HSB-HC-1A thru Steam Trap UH-T-597-2 to HSB-HC return header
3-UHT-126	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UHT-2-9
3-UHT-126-A	2	9321-F-41563	S	NC	Operating conditions unknown.	P&ID	Aux Steam from HSB-HC-1B thru Steam Trap UH-T-597-3 to HSB-HC return header
3-UHT-127	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UHT-2-10
3-UHT-128	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UHT-2-5
3-UHT-129	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UHT-2-6
3-UHT-130	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UHT-2-8
3-UHT-131	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UHT-2-13
3-UHT-132	1	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam to and from UHT-2-12
3-UHT-136	0.75	9321-F-41563	S	NC	Operating conditions unknown.	PEPSE	Aux Steam thru Steam Trap UH-T-599-16
3-UHT-166	1.5	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam downstream of valve UH-723 thru UHT-10-1 to Cond Receiver header
3-UHT-167	1.5	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam downstream of valve UH-725 thru UHT-10-2 to Cond Receiver header
3-UHT-168	1.5	9321-F-27273	S	NC	Operating conditions unknown.	P&ID	Aux Steam downstream of valve UH-727 thru UHT-10-3 to Cond Receiver header

Condensate Return Unit Heater Steam Traps (UHT), Unit 3

Section B: SNM Program Lines

3-UHT-01: Auxiliary Steam to Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-UHT-188	1.5	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-620-2 to Cond Receiver header
3-UHT-189	0.75	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-617-1 to Cond Receiver header
3-UHT-191	0.75	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-618 to Cond Receiver header
3-UHT-193	0.75	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-617-3 to Cond Receiver header
3-UHT-195	1	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-619 to Cond Receiver header
3-UHT-197	0.75	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam thru Steam Trap UH-T-617-2 to Cond Receiver header
3-UHT-198	0.75	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam from Humidifier AS HU-2 thru Steam Trap UH-T-617-4 to Cond Receiver header
3-UHT-199	2	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam from Hot Water heater thru Steam Trap UH-T-622 to Cond Receiver header
3-UHT-200	0.75	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam from Humidifier AS HU-1 thru Steam Trap UH-T-617-5 to Cond Receiver header
3-UHT-201	1	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam from Heat Exchanger As HX-2 thru Steam Trap UH-T-620-1 to Cond Receiver header
3-UHT-202	2.5	9321-F-41553	S	NC	Operating conditions unknown.	P&ID	Aux Steam from Heat Exchanger As HX-1 thru Steam Trap UH-T-621 to Cond Receiver header

Condensate Return Unit Heater Steam Traps (UHT), Unit 3

Section B: SNM Program Lines

3-UHT-01: Auxiliary Steam to Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-UHT-228	1.5	9321-F-41283, 9321-F-41293	S	NC	Operating conditions unknown.	P&ID	Main Steam leak thru Steam Trap UH-T-11 to House Service Boiler Condensate Return Tank

Section C: Excluded Lines

3-UHT-01: Auxiliary Steam to Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-UHT-025-A	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-379 Bypass
3-UHT-027-A	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-409-2 Bypass
3-UHT-029-A	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap Bypass through valve UH-471
3-UHT-030-A	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-409-4 Bypass
3-UHT-032-A	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-408-5 Bypass
3-UHT-034-A	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-409-3 Bypass
3-UHT-035-A	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-408-4 Bypass
3-UHT-036-A	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-409-5 Bypass
3-UHT-037-A	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-408-6 Bypass
3-UHT-038-A	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-409-1 Bypass
3-UHT-040-A	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-408-3 Bypass
3-UHT-042-A	1	9321-F-41293	E	EI	Valve shown closed on P&ID.	P&ID	Steam trap UH-T-26 Bypass
3-UHT-042-B	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-408-2 Bypass

Condensate Return Unit Heater Steam Traps (UHT), Unit 3

Section C: Excluded Lines

3-UHT-01: Auxiliary Steam to Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-UHT-043-A	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-407-2 Bypass
3-UHT-045-B	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-408-9 Bypass
3-UHT-046-A	1	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-303 Bypass
3-UHT-046-B	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-408-7 Bypass
3-UHT-047-A	0.75	9321-F-41443	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-408-8 Bypass
3-UHT-063	1.5	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-597-1 Bypass
3-UHT-064-A	0.75	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-599-1 Bypass
3-UHT-067-A	0.75	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-599-2 Bypass
3-UHT-070-A	0.75	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-599-3 Bypass
3-UHT-083	2	9321-F-40573	E	EI	Valve shown closed on P&ID.	P&ID	UH-T-9-3 Bypass
3-UHT-084	2	9321-F-40573	E	EI	Valve shown closed on P&ID.	P&ID	UH-T-9-4 Bypass
3-UHT-085	0.75	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	UH-T-599-4 Bypass
3-UHT-086	0.75	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	UH-T-599-5 Bypass
3-UHT-087	0.75	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	UH-T-599-6 Bypass
3-UHT-088	0.75	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	UH-T-599-14 Bypass
3-UHT-089	1	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	UH-T-598-1 Bypass
3-UHT-098-A	0.75	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	UH-T-599-7 Bypass
3-UHT-099	0.75	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	UH-T-599-8 Bypass
3-UHT-100-A	0.75	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	UH-T-599-9 Bypass
3-UHT-117	0.75	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	UH-T-599-10 Bypass

Condensate Return Unit Heater Steam Traps (UHT), Unit 3

Section C: Excluded Lines

3-UHT-01: Auxiliary Steam to Steam Traps

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-UHT-118	0.75	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	UH-T-599-12 Bypass
3-UHT-119	0.75	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	UH-T-599-11 Bypass
3-UHT-120	0.75	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	Uh-T-599-15 bypass
3-UHT-121	0.75	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	UH-T-599-13 bypass
3-UHT-129-A	1	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-597-3 Bypass
3-UHT-130-A	1	9321-F-41563	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-597-2 Bypass
3-UHT-206	0.75	9321-F-41553	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-620-1 Bypass
3-UHT-207	1.5	9321-F-41553	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-622 Bypass
3-UHT-209	1.5	9321-F-41553	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-620-2 Bypass
3-UHT-210	2	9321-F-41553	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-621 Bypass
3-UHT-229	1	9321-F-41283	E	EI	Valve shown closed on P&ID.	P&ID	Steam Trap UH-T-11 Bypass

MSR Vent Chamber Discharge (VCD), Unit 3

Section B: SNM Program Lines

3-VCD-01: Moisture Separator Reheater Vent Chamber Discharge Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-VCD-001	3	9321-F-20233 Sheet 1	S	NC	Exact Conditions Unknown	PEPSE	MSR 31A Vent Chamber Discharge
3-VCD-002	3	9321-F-20233 Sheet 1	S	NC	Exact Conditions Unknown	PEPSE	MSR 32A Vent Chamber Discharge
3-VCD-003	3	9321-F-20233 Sheet 1	S	NC	Exact Conditions Unknown	PEPSE	MSR 33A Vent Chamber Discharge
3-VCD-004	3	9321-F-20233 Sheet 2	S	NC	Exact Conditions Unknown	PEPSE	MSR 31B Vent Chamber Discharge
3-VCD-005	3	9321-F-20233 Sheet 2	S	NC	Exact Conditions Unknown	PEPSE	MSR 32B Vent Chamber Discharge
3-VCD-006	3	9321-F-20233 Sheet 2	S	NC	Exact Conditions Unknown	PEPSE	MSR 33B Vent Chamber Discharge
3-VCD-010	3	9321-F-20233 Sheet 1, 9321-F-20203 Sheet 1	S	NC	Exact Conditions Unknown	PEPSE	Vent Chamber Discharge Header to FWH 36A
3-VCD-011	3	9321-F-20233 Sheet 1, 9321-F-20203 Sheet 1	S	NC	Exact Conditions Unknown	PEPSE	Vent Chamber Discharge Header to FWH 36A
3-VCD-012	3	9321-F-20233 Sheet 1, 9321-F-20203 Sheet 1	S	NC	Exact Conditions Unknown	PEPSE	Vent Chamber Discharge Header to FWH 36B
3-VCD-013	3	9321-F-20233 Sheet 2, 9321-F-20203 Sheet 1	S	NC	Exact Conditions Unknown	PEPSE	Vent Chamber Discharge Header to FWH 36C
3-VCD-014	3	9321-F-20233 Sheet 2, 9321-F-20203 Sheet 1	S	NC	Exact Conditions Unknown	PEPSE	Vent Chamber Discharge Header to FWH36B
3-VCD-015	3	9321-F-20233 Sheet 2, 9321-F-20203 Sheet 1	S	NC	Exact Conditions Unknown	PEPSE	Vent Chamber Discharge Header to FWH 36C
3-VCD-016	3	9321-F-20233 Sheet 1	S	NC	Exact Conditions Unknown	PEPSE	Vent Chamber Discharge to Condenser No 31
3-VCD-017	3	9321-F-20233 Sheet 1	S	NC	Exact Conditions Unknown	PEPSE	Vent Chamber Discharge to Condenser No 31
3-VCD-018	3	9321-F-20233 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	Vent Chamber Discharge to Condenser No 33

MSR Vent Chamber Discharge (VCD), Unit 3

Section B: SNM Program Lines

3-VCD-01: Moisture Separator Reheater Vent Chamber Discharge Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	Mod. Ex. Crit.	Comments	Reference	Line Description
3-VCD-022	3	9321-F-20233 Sheet 1	S	NC	Exact Conditions Unknown	PEPSE	Vent Chamber Discharge to Condenser No 31
3-VCD-023	3	9321-F-20233 Sheet 1	S	NC	Exact Conditions Unknown	PEPSE	Vent Chamber Discharge to Condenser No 31
3-VCD-024	3	9321-F-20233 Sheet 1	S	NC	Operating conditions unknown.	PEPSE	Vent Chamber Discharge to Condenser No 33
3-VCD-025	3	9321-F-20233 Sheet 2	S	NC	Exact Conditions Unknown	PEPSE	Vent Chamber Discharge to Condenser No 31
3-VCD-026	3	9321-F-20233 Sheet 2	S	NC	Exact Conditions Unknown	PEPSE	Vent Chamber Discharge to Condenser No 31
3-VCD-027	3	9321-F-20233 Sheet 2	S	NC	Operating conditions unknown.	PEPSE	Vent Chamber Discharge to Condenser No 32

Section C: Excluded Lines

3-VCD-01: Moisture Separator Reheater Vent Chamber Discharge Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-VCD-007	3	9321-F-20233 Sheet 1	E	EM	Piping replaced with Chrome-moly	P&ID	Vent Chamber Discharge Header to FWH 36A
3-VCD-008	3	9321-F-20233 Sheet 1	E	EM	Piping replaced with Chrome-moly	P&ID	Vent Chamber Discharge Header to FWH 36A
3-VCD-009	3	9321-F-20233 Sheet 1	E	EM	Piping replaced with Chrome-moly	P&ID	Vent Chamber Discharge Header to FWH 36B
3-VCD-019	3	9321-F-20233 Sheet 1	E	EM	Piping replaced with Stainless Steel	P&ID	Vent Chamber Discharge to Condenser No 31
3-VCD-020	3	9321-F-20233 Sheet 1	E	EM	Piping replaced with Stainless Steel	P&ID	Vent Chamber Discharge to Condenser No 31

MSR Vent Chamber Discharge (VCD), Unit 3

Section C: Excluded Lines

3-VCD-01: Moisture Separator Reheater Vent Chamber Discharge Lines

Line Number	Size (in.)	P&ID No.	Sus. Cat.	FAC Ex. Crit.	Comments	Reference	Line Description
3-VCD-021	3	9321-F-20233 Sheet 1	E	EM	Piping replaced with Stainless Steel	P&ID	Vent Chamber Discharge to Condenser No 33

Susceptibility Category (Sus. Cat.) Legend:

M	CHECWORKS Modeled
S	Susceptible, not modeled
E	Excluded from the FAC program (non-susceptible)

Model Exclusion Criteria (Mod. Ex. Crit.) Legend:

NC	Not modeled due to unknown or varying operating Conditions
NL	Not to be modeled due to Localized FAC susceptibility
NM	Non-Modelable due to conditions outside CHECWORKS Modeling capabilities
NQ	Not to be modeled due to high steam Quality, CHECWORKS predictions are of little value
NS	Non-modelable due to Socket-welded fittings
NV	Not to be modeled because line is Visually inspected

FAC Exclusion Criteria (FAC Ex. Crit.) Legend:

EC	Excluded due to Combination of infrequent op above temp threshold
EF	Excluded due to low or no Flow
EI	Excluded due to Infrequent operation
EM	Excluded due to FAC-resistant Material
EO	Excluded due to high dissolved Oxygen content
EP	Exluded, does not contain Piping
EQ	Excluded due to high steam Quality
ER	Excluded, Removed from service and "cut" and "capped"
ET	Excluded due to operating Temperature (single phase, < 200 deg F)
EW	Excluded because system, subsytem, or line is non-Water

Appendix D
Revision History

Revision 0

Initial Issue of document.

Revision 1

Systems, subsystem names, and line names were updated to incorporate the new system list.

Revision 2

SSE was updated to incorporate line replacements. Tables D.1 and D.2 below detail the changes:

Table D.1 Subsystem Changes

Subsystem Number	Change	Reference
3-3HD-02	Subsystem changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-FW-03	Subsystem changed to excluded due to non-susceptible material.	SFA Model

Table D.2 Line Changes

Line Number	Change	Reference
3-2HD-002	Line changed to excluded due to non-susceptible material.	SFA Database
3-2HD-003	Line changed to excluded due to non-susceptible material.	SFA Database
3-2HD-005	Line changed to excluded due to non-susceptible material.	SFA Database
3-2HD-006	Line changed to excluded due to non-susceptible material.	SFA Database
3-2HD-008	Line changed to excluded due to non-susceptible material.	SFA Database
3-2HD-009	Line changed to excluded due to non-susceptible material.	SFA Database
3-3HD-018	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-3HD-019	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-3HD-020	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-3HD-021	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-3HD-022	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-3HD-023	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-3HD-027	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-3HD-028	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B

Line Number	Change	Reference
3-3HD-029	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-3HD-030	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-3HD-031	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-5EX-055	Line changed to excluded due to non-susceptible material.	SFA Database
3-5EX-056	Line changed to excluded due to non-susceptible material.	SFA Database
3-5EX-057	Line changed to excluded due to non-susceptible material.	SFA Database
3-5EX-058	Line changed to excluded due to non-susceptible material.	SFA Database
3-5EX-059	Line changed to excluded due to non-susceptible material.	SFA Database
3-5EX-060	Line changed to excluded due to non-susceptible material.	SFA Database
3-5EX-061	Line changed to excluded due to non-susceptible material.	SFA Database
3-5EX-062	Line changed to excluded due to non-susceptible material.	SFA Database
3-5EX-064	Line changed to excluded due to non-susceptible material.	SFA Database
3-5EX-065	Line changed to excluded due to non-susceptible material. Renamed to 3-5EX-065-A.	SFA Database
3-5EX-065-B	Added line for susceptible nozzle.	SFA Database
3-5EX-066	Line changed to excluded due to non-susceptible material. Renamed to 3-5EX-066-A.	SFA Database
3-5EX-066-B	Added line for susceptible nozzle.	SFA Database
3-5EX-067	Line changed to excluded due to non-susceptible material. Renamed to 3-5EX-067-A.	SFA Database
3-5EX-067-B	Added line for susceptible nozzle.	SFA Database
3-6EX-001	Line changed to excluded due to non-susceptible material. Renamed to 3-6EX-001-B.	SFA Database
3-6EX-001-A	Added line for susceptible nozzle.	SFA Database
3-6EX-002	Line changed to excluded due to non-susceptible material. Renamed to 3-6EX-002-B.	SFA Database
3-6EX-002-A	Added line for susceptible nozzle.	SFA Database
3-6EX-003	Line changed to excluded due to non-susceptible material.	SFA Database
3-6EX-004	Line changed to excluded due to non-susceptible material.	SFA Database
3-6EX-005	Line changed to excluded due to non-susceptible material.	SFA Database
3-6EX-006	Line changed to excluded due to non-susceptible material.	SFA Database
3-6EX-007	Line changed to excluded due to non-susceptible material.	SFA Database
3-6EX-008	Line changed to excluded due to non-susceptible material.	SFA Database
3-6EX-009	Line changed to excluded due to non-susceptible material.	SFA Database
3-6EX-010	Line changed to excluded due to non-susceptible material.	SFA Database
3-6HD-006	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-6HD-008	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B

Line Number	Change	Reference
3-6HD-011	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-6HD-013	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-6HD-016	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-6HD-018	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-6HD-019	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-FW-048	Line changed to excluded due to non-susceptible material.	SFA Database
3-FW-049	Line changed to excluded due to non-susceptible material.	SFA Database
3-MSD-079	Line changed to excluded due to non-susceptible material. Renamed to 3-MSD-079-B.	SFA Database
3-MSD-079-A	Added line for susceptible nozzle.	SFA Database
3-MSD-080	Line changed to excluded due to non-susceptible material. Renamed to 3-MSD-080-B.	SFA Database
3-MSD-080-A	Added line for susceptible nozzle.	SFA Database
3-MSD-081	Line changed to excluded due to non-susceptible material. Renamed to 3-MSD-081-B.	SFA Database
3-MSD-081-A	Added line for susceptible nozzle.	SFA Database
3-MSD-082	Line changed to excluded due to non-susceptible material. Renamed to 3-MSD-082-B.	SFA Database
3-MSD-082-A	Added line for susceptible nozzle.	SFA Database
3-MSD-083	Line changed to excluded due to non-susceptible material. Renamed to 3-MSD-083-B.	SFA Database
3-MSD-083-A	Added line for susceptible nozzle.	SFA Database
3-MSD-084	Line changed to excluded due to non-susceptible material. Renamed to 3-MSD-084-B.	SFA Database
3-MSD-084-A	Added line for susceptible nozzle.	SFA Database
3-MSD-085	Line changed to excluded due to non-susceptible material. Renamed to 3-MSD-085-A.	SFA Database
3-MSD-085-B	Added line for susceptible nozzle.	SFA Database
3-MSD-086	Line changed to excluded due to non-susceptible material. Renamed to 3-MSD-086-A.	SFA Database
3-MSD-086-B	Added line for susceptible nozzle.	SFA Database
3-MSD-087	Line changed to excluded due to non-susceptible material. Renamed to 3-MSD-087-A.	SFA Database
3-MSD-087-B	Added line for susceptible nozzle.	SFA Database
3-MSD-088	Line changed to SNM due to localized FAC susceptibility.	SFA Database
3-MSD-089	Line changed to SNM due to localized FAC susceptibility.	SFA Database
3-MSD-090	Line changed to SNM due to localized FAC susceptibility.	SFA Database

Line Number	Change	Reference
3-MSD-091	Line changed to excluded due to infrequent operation.	System Description 18.0, Rev. 5, pg. 23
3-MSD-092	Line changed to excluded due to infrequent operation.	System Description 18.0, Rev. 5, pg. 23
3-MSD-093	Line changed to excluded due to infrequent operation.	System Description 18.0, Rev. 5, pg. 23
3-MSD-094	Line changed to excluded due to infrequent operation.	System Description 18.0, Rev. 5, pg. 23
3-MSD-095	Line changed to excluded due to infrequent operation.	System Description 18.0, Rev. 5, pg. 23
3-MSD-096	Line changed to excluded due to infrequent operation.	System Description 18.0, Rev. 5, pg. 23
3-MST-166	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-MST-167	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B
3-PD-039	Line changed to excluded due to non-susceptible material.	IP3-RPT-MULT-03162, Rev. 3, Appendix B

Attachment A
Industry FAC Experience Table

Industry experience is an important factor in the identification of systems, subsystems, and lines susceptible to Flow-Accelerated Corrosion (FAC). A table of important industry events and their applicability to Indian Point 3 was compiled using the following sources:

- "Recommendations for an Effective Flow-Accelerated Corrosion Program," EPRI NSAC 202L-R3, 2006.
- EPRI, *Flow-Accelerated Corrosion in Power Plants*, B. Chexal et al, EPRI TR-106611-R1, 1998.
- CHUG Plant Experience Database, Revision 2, December 1995.
- 26th CHUG Meeting Presentation by Jeff Horowitz "Review and Lessons Learned from Historical FAC Failures".
- 31st CHUG Meeting Presentation by Aaron Kelley "Unit 1 #2 LP Heater ES Nozzles".
- 32th CHUG Meeting Presentation by Doug Munson "Update on Mihama-3".
- 33rd CHUG Meeting Presentation by Aaron Kelley "Results of L2R10 Inspections at LaSalle Unit 2".
- 33rd CHUG Meeting Presentation by Whit Gallman "Unisolable Steam Leak Downstream of Valve 2HM-23".
- CHUG Conference Meeting Minutes, FAC Experience Reports, and Presentations.
- FACnet Email Message Archive.
- Secondary Pipe Rupture (9 August 2004, Mihama Unit 3, Kansai EPC), WANO EAR TYO 04-013, October 8, 2004.
- Information Notice 82-2: Failures in Turbine Exhaust Lines", U.S. Nuclear Regulatory Commission (NRC), July 9, 1982.
- "Information Notice 86-106: Feedwater Line Break", U.S. Nuclear Regulatory Commission (NRC), December 16, 1986.
- "Information Notice 86-106, Supplement 1: Feedwater Line Break", U.S. Nuclear Regulatory Commission (NRC), February 13, 1987.
- "Information Notice 86-106, Supplement 2: Feedwater Line Break", U.S. Nuclear Regulatory Commission (NRC), March 18, 1987.
- "NRC Bulletin No. 87-01: Thinning of Pipe Walls in Nuclear Power Plants", U.S. Nuclear Regulatory Commission (NRC), July 9, 1987.
- "Information Notice 87-36, Significant Unexpected Erosion of Feedwater Lines", U.S. Nuclear Regulatory Commission (NRC), August 4, 1987.
- "Information Notice 88-17, Summary of Responses to NRC Bulletin 87-01, Thinning of Pipe Walls in Nuclear Power Plants", U.S. Nuclear Regulatory Commission (NRC), April 22, 1988.

- "Information Notice 86-106, Supplement 3: Feedwater Line Break", U.S. Nuclear Regulatory Commission (NRC), November 10, 1988.
- "Erosion/Corrosion-Induced Pipe Wall Thinning", Generic Letter 89-08, U.S. Nuclear Regulatory Commission (NRC), May 2, 1989.
- "Investigation into Flow-Accelerated Corrosion at Low Temperatures", Document 1015070, Electric Power Research Institute (EPRI), November 2007.
- "Flow-Accelerated Corrosion – The Entrance Effect", Document 1015072, Electric Power Research Institute (EPRI), November 2007.
- "Erosive Attack", Technical Update 1015071, Electric Power Research Institute (EPRI), November 2007.

Item Number	System	Location/Area	Plant	Plant Type	Year	Notes
1	All	Downstream of Flow Orifices and Flow Meters	Many	BWR, PWR		Failures reported in piping immediately downstream of orifices and flow meters. This is a generic issue applicable to all systems.
2	All	Downstream of Control Valves (level control valves)	Millstone 2&3, Surry	BWR, PWR		Many plants reported instances of FAC degradation and some significant failures (Millstone 2&3, Surry). This is a generic issue applicable to all systems.
3	All	Downstream of Leaking Valves and Steam Traps	Many	All		Leaking valves and steam traps may be found by plant thermal performance evaluation. Downstream piping may experience severe conditions and may have been excluded from FAC Program due to infrequent operation. This is a generic issue applicable to all systems.
4	All	Miscellaneous Drains to Common Headers into Condenser	Many	All		Extensive industry exp in miscellaneous drain headers from steam drains to the condenser. In addition to FAC, these headers are susceptible to liquid impingement erosion and/or flashing/cavitation as explained in EPRI Erosive Attack Technical Update 1015071.
5	Condensate	Feedwater Pump Suction	Surry Unit 2	PWR	1986	Pipe rupture at Surry Unit 2. Occurred in 18" OD, Tnom = 0.5" elbow upstream of feedwater pumps (first elbow off header to FWP). T=374 deg F.
6	Condensate	Condensate (between 4th highest pressure FWH and dearator)	Mihama	PWR	2004	Failure in condensate system at Mihama. Occurred in 22" pipe downstream of flow measuring orifice. 284 deg F
7	Extraction Steam (or Bleed Steam)	Extraction Steam (All stages carrying wet steam)	Oconee, Vermont Yankee, Trojan, Zion, Browns Ferry	BWR, PWR	1982	Failures in steam lines due to FAC. All extraction stages carrying wet steam are susceptible to FAC. In general, all plants have experience with thinning in the extraction steam system (plants listed appeared in NRC Information Notice 82-22)
8	Extraction Steam (or Bleed Steam)	HP Extraction 2nd Stage	ANO 2	PWR	1989	Fishmouth failure at ANO 2. Occurred in 14" OD, 2-phase flow. Failure at Zion (1988), Oconee (1982).
9	Extraction Steam (or Bleed Steam)	HP Extraction	Sequoyah 2	PWR	1993	Fishmouth failure at Sequoyah 2. Occurred in 10" straight pipe downstream of tee in HP extraction.

Item Number	System	Location/Area	Plant	Plant Type	Year	Notes
10	Extraction Steam (or Bleed Steam)	Extraction (4th Stage)	Fort Calhoun	PWR	1997	Fishmouth rupture at Fort Calhoun in third elbow (12" bent pipe R/D = 5) downstream of turbine in extraction steam system. Section of upstream piping had been replaced in 1985 due to FAC; this downstream section was not inspected. 411 deg F, 2 phase
11	Extraction Steam (or Bleed Steam)	Extraction (carbon steel components in Cr-Mo/Stainless/etc line)	LaSalle	BWR	2004	Failure of LP Heater inlet nozzles (carbon steel nozzles in Cr-Mo line). Also through-walls on carbon steel pup piece on bellows assembly in Cr-Mo line (bellows was stainless steel). The conclusion from these events is that to be non-susceptible to FAC the entire line (incl. nozzles, valves, pup pieces, etc.) must be of FAC-resistant material.
12	Feedwater	Feedwater Pump Outlet & DS of CVs	Oyster Creek	BWR	1978	Thinning caused by FAC at Oyster Creek in 1978. Cracking observed at feedwater pump outlet and downstream of flow/level control valves.
13	Feedwater	Feedwater Pump Discharge	Navajo	Fossil	1982	Pipe rupture at Navajo. Occurred in 10" OD, Tnom = 0.365" elbow downstream of boiler feed pump. T=360 deg F.
14	Feedwater	Final Feedwater (Safety-Related)	Trojan	PWR	1987	Extensive thinning to min acceptable wall thickness at Trojan in safety related feedwater (and non-safety related). High velocity and large counterbores exacerbated FAC.
15	Feedwater	Feedwater at Flow Measurement Orifice	Loviisa	PWR	1990	Rupture at Loviisa. Occurred in feedwater system at flow measurement orifice.
16	Feedwater	Feedwater	Pleasant Prairie	Fossil	1995	Instantaneous double-ended pipe break at Pleasant Prairie. Occurred in 12" feedwater line downstream of valve station and upstream of economizer and boiler.
17	Feedwater	Control Valve Bypass Lines	San Onofre and Diablo Canyon	BWR, PWR		Serious thinning at San Onofre and Diablo Canyon (could be valve leakage, left open at full power-high velocity, or infrequent but severe conditions).
18	Feedwater	Feedwater Pump Min Flow (Recirculation) Lines	Many	All		Feedwater pump min flow lines to condenser have experienced significant degradation.
19	Heater Drain	Heater Drain Pump Recirc (Bypass)	Millstone 2	PWR	1995	Failure at Millstone 2. Occurred in 8" recirc line from heater drain pump to heater drain tank. Line operated during startup only (0-30% power).

Item Number	System	Location/Area	Plant	Plant Type	Year	Notes
20	Heater Vents	Feedwater Heater Vents to Condenser	ANO, Kewaunee, McGuire, Point Beach, Waterford	PWR, BWR		Extensive FAC-induced thinning found throughout this system at many plants. Some plants have replaced the entire system with non-susceptible material (stainless steel or Cr-Mo).
21	Main Steam	Cross-Under Piping (also called Cold Reheat, HP Turbine to Moisture Separator)	North Anna, ANO, Point Beach, D.C. Cook	BWR, PWR		Significant FAC in cross-under piping at North Anna, ANO, and Point Beach. Some plants have small amounts of Cu/Cr in this lines which significantly reduces FAC.
22	Moisture Separator Drain	Moisture Separator Drain Tank Drain	Millstone 3	PWR	1990	Catastrophic failure at Millstone 3. Occurred in 6" OD Moisture Sep. Drain Tank drain immediately downstream of level CV. 380 deg F, 0% quality.
23	Reheater Drain	Reheater Drain Tank Drain	Millstone 2	PWR	1991	Rupture at Millstone 2. Occurred in 8" Reheater Drain Tank drain immediately downstream of level CV. 463 deg F, 0% quality.
24	Reheater Drain	First Stage Reheater Drain	Callaway	PWR	1999	Failure at Callaway just downstream of long horizontal section in first stage reheater drain. 417 deg F, 4.5% quality
25	Reheater Drain	Moisture Separator Reheater Drain/Vent to Drain Tank (Scavenging Steam)	McGuire	PWR	2005	Unisolable steam leak occurred in 2" line that vents wet steam from MSR to drain tank. Flashing contributed to wear (pressure drop caused by "tortuous path" through many fittings in line). 540 deg F, wet steam
26	Multiple Systems	Deoxygenated lines operating at 120ºF	South Texas Project, Palo Verde, Surry	PWR, BWR		Some plants have experienced Low-Temperature FAC wear in deoxygenated, neutral water at about 120ºF as per EPRI Technical Report 1015170 “Investigation into Flow-Accelerated Corrosion at Low Temperatures.
27	Multiple Systems	Multiple Locations	Diablo Canyon, Salem, V. C. Summer	PWR, BWR		Pipes made of corrosive material have shown high corrosion rates downstream of welds connecting non-resistant material to the resistant material.

Attachment B
Referenced Correspondence and Communications

Email from Chris Pott (CSI) to Ian Mew (IPEC) regarding information requests, dated 10/2/2009.

CSI Document 0700.104.C.014

Ian,

My name is Chris Pott and I am one of the engineers working on the SSE/SNM Analysis for Indian Point along with Ryan Doremus. I've completed most of the work on the IPEC3 SSE/SNM but need a few items in order to complete the rest of the documents. Any additional information for Unit 3 would be helpful. The questions that I have are as follows:

1. Could I get any P&IDs that would contain Gland Seal Piping for Unit 3? A document I found that would be useful was B237144-4 for Unit 2 which shows the Drain and Gland Seal for the low and high pressure turbines. A similar P&ID for Unit 3 would be excellent.
2. I have been using the flow diagram symbols list associated with Unit 2 but have noticed that the P&IDs for Unit 3 reference a Unit 3 Flow Diagrams List. This List would help me to complete the Systems List for the SSE/SNM. Could you please send the diagram 9321-D-20163?
3. In addition to the above requests, I have noticed a few other P&IDs I need to complete the SSE/SNM. Could you please send the following P&IDs:
    1. "Auxiliary Steam Supply and Condensate Return System," Dwg. No. 9321-F-40573.
    2. "Auxiliary Boiler Reboiler Steam System," Dwg. No. 9321-F-41573.
    3. "Sheet 1 of 2 House Boiler Bldg. Aux. Steam Supply System," Dwg. No. 9321-F-41283.
    4. 9321-F-20343
    5. 9321-F-20323
    6. 9321-F-41443 sheet 1

4. Lastly, IP3-RPT-MULT-03162 references several System Descriptions Documents. These SD's would help clarify lines on the SSE/SNM that I need. Could you please send the following System Descriptions:
    1. Unit No.3, System Description No. 7, "Steam Generator Blowdown System".
    2. Unit No.3, System Description No. 18, "Main Steam Reheat Steam System".
    3. Unit No.3, System Description No. 18.1, "Main Dumps and Low Pressure Bypass Dumps".
    4. Unit No.3, System Description No. 19, "Extraction Steam Vents and Drains".
    5. Unit No.3, System Description No. 21, "Feedwater System".
    6. Unit No.3, System Description No. 26, "Main Turbine Generator".
    7. Unit No.3, System Description No. 29, "Auxiliary Steam System".
    8. Unit No. 3, System Description No. 29.11, "House Service Boiler".
    9. Unit No.3, System Description, "Steam Generator Blowdown Recovery System".

If you have any questions, let me know.

Thank you,

Christopher R. Pott
Engineer
CSI Technologies, Inc.
847-836-3000 x792

Conversation between Ian Mew (IPEC) and Chris Pott (CSI) regarding responses to information requests, dated 11/5/2009.

CSI Document # 0700.104.C.015

On November 5, 2009 a telephone conversation was held between Chris Pott (CSI) and Ian Mew (IPEC) to discuss data that was needed to finish the Unit 3 SSE/SNM. The data, which consisted of 14 system descriptions and 7 drawings was then delivered to CSI via the CSI FTP site and filed into the IPEC 3 input data folder.

Conversation between Ian Mew (IPEC) and Chris Pott (CSI) regarding a missing P&ID, dated 11/17/2009.

0700.104.C.017

In a conversation with Ian Mew on Thursday, Nov 19,2009, it was discovered that a particular drawing, 9321-F-80793 could not be located. The issue involved with this is that there is an auxiliary steam header going from the auxiliary steam supply system to this drawing and a condensate return header coming from this drawing. It was determined the steam supply entering the drawing, which shows the Outage Support Building, is susceptible, non-modelable, at a Consequence of Failure level of 2. Because the drawing cannot be located, the lines could not be analyzed. It should be noted that the Aux Steam lines in the Outage Support Building are potentially susceptible to FAC and should be treated as such until proven otherwise.