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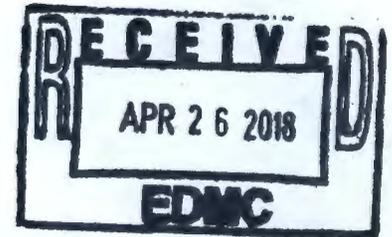
OFFICE OF RIVER PROTECTION

P.O. Box 450, MSIN H6-60
Richland, Washington 99352

APR 19 2018

18-ECD-0023

Ms. Alexandra K. Smith, Program Manager
Nuclear Waste Program
Washington State
Department of Ecology
3100 Port of Benton Blvd.
Richland, Washington 99354



Ms. Smith:

SUBMITTAL OF HANFORD FACILITY RESOURCE CONSERVATION AND RECOVERY ACT PERMIT MODIFICATION NOTIFICATION FORM 24590-LAW-PCN-ENV-17-012

- References:
1. WA7890008967, "Dangerous Waste Portion of the Hanford Facility Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Dangerous Waste, Part III, Operating Unit 10, 'Waste Treatment and Immobilization Plant.'"
 2. BNI letter from B.P. Reilly to B.T. Vance, ORP, "Submittal of Hanford Facility Resource Conservation and Recovery Act Permit Modification Notification Form 24590-LAW-PCN-ENV-17-012," CCN: 303843, dated March 13, 2018.

This letter transmits Hanford Facility Resource Conservation and Recovery Act Permit Modification Notification Form 24590-LAW-PCN-ENV-17-012, attached, for the Washington State Department of Ecology review and approval. The form describes a requested Class 1 modification to Reference 1.

The Class 1 permit modification submits revisions to Piping and Instrumentation Diagrams for the Low-Activity Waste Primary Offgas Process System equipment located in Appendix 9.2 of the permit (Reference 1).

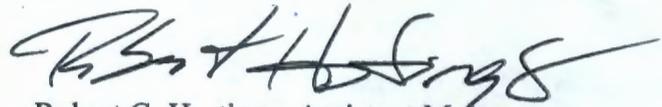
Washington State Department of Ecology comments resulting from review of this modification notification form and the associated information have been dispositioned.

Ms. Alexandra K. Smith
18-ECD-0023

-2-

APR 19 2018

If you have any questions, please contact me, or your staff may contact Gae M. Neath,
Environmental Compliance Division, (509) 376-7828.



Robert G. Hastings, Assistant Manager
Technical and Regulatory Support

ECD:GMN

Attachment

cc w/attach:

B.L. Curn, BNI
B.G. Erlandson, BNI
R.J. Landon, BNI
J.T. Levey, BNI
S.K. Murdock, BNI
B. Reilly, BNI
D.C. Robertson, BNI
J. Cantu, Ecology (7 hard copies & CD)
A.S. Carlson, Ecology (CD)
T.Z. Gao, Ecology (CD)
M.E. Jones, Ecology (CD)
J.K. Perry, MSA
A.C. McKarns, RL
D. Rowland, YN
Administrative Record (WTP H-0-8)
BNI Correspondence
Environmental Portal

cc w/o attach:

M. Johnson, CTUIR
S.L. Dahl, Ecology
D. McDonald, Ecology
J. Bell, NPT (Acting)
G.P. Bohnee, NPT
K. Niles, Oregon Energy
P.M. Pak, RL (Acting)
R. Longoria, YN (Acting)

**Attachment
18-ECD-0023
(23 Pages Excluding Cover Sheet)**

**Hanford Facility RCRA Permit Modification Notification
Form 24590-LAW-PCN-ENV-17-012**

Quarter Ending March 2018

24590-LAW-PCN-ENV-17-012

Hanford Facility RCRA Permit Modification Notification Form
Part III, Operating Unit 10
Waste Treatment and Immobilization Plant

Index

- Page 2 of 3: Hanford Facility RCRA Permit, Part III, Operating Unit 10, Waste Treatment and Immobilization Plant
 Replace the Piping and Instrumentation Diagrams (P&IDs) for the following Low-Activity Waste (LAW) Primary Offgas Process System (LOP) equipment in Appendix 9.2 of the Dangerous Waste Permit (DWP):
- Melter 1 Submerged Bed Scrubber (LOP-SCB-00001)
 - Melter 1 Submerged Bed Scrubber (SBS) Condensate Vessel (LOP-VSL-00001)
 - Melter 1 Wet Electrostatic Precipitator (LOP-WESP-00001)
 - Melter 1 Film Cooler Offgas
 - Melter 2 Submerged Bed Scrubber (LOP-SCB-00002)
 - Melter 2 Submerged Bed Scrubber (SBS) Condensate Vessel (LOP-VSL-00002)
 - Melter 2 Wet Electrostatic Precipitator (LOP-WESP-00002)
 - Melter 2 Film Cooler Offgas
 - Melter 1 Standby Film Cooler (LOP-FCLR-00002)
 - Melter 1 Primary Film Cooler (LOP-FCLR-00001)
 - Melter 2 Standby Film Cooler (LOP-FCLR-00004)
 - Melter 2 Primary Film Cooler (LOP-FCLR-00003)

Submitted by Co-Operator:

Roger J. Landon 3/6/18
 Roger J. Landon Date

Reviewed by ORP Program Office:

J. F. Grindstaff 4/16/18
 J. F. Grindstaff Date

Quarter Ending March 2018

24590-LAW-PCN-ENV-17-012

Hanford Facility RCRA Permit Modification Notification Form			
Unit:		Permit Part:	
Waste Treatment and Immobilization Plant		Part III, Operating Unit 10	
Description of Modification:			
The purpose of this Class 1 prime modification is to replace the following P&IDs in Appendix 9.2 of the DWP:			
Appendix 9.2			
Replace:	24590-LAW-M6-LOP-00001001, Rev. 0	With:	24590-LAW-M6-LOP-00001001, Rev. 1
	24590-LAW-M6-LOP-00001002, Rev. 0		24590-LAW-M6-LOP-00001002, Rev. 1
	24590-LAW-M6-LOP-00001004, Rev. 1		24590-LAW-M6-LOP-00001004, Rev. 2
	24590-LAW-M6-LOP-00001005, Rev. 0		24590-LAW-M6-LOP-00001005, Rev. 1
	24590-LAW-M6-LOP-00002001, Rev. 0		24590-LAW-M6-LOP-00002001, Rev. 1
	24590-LAW-M6-LOP-00002002, Rev. 0		24590-LAW-M6-LOP-00002002, Rev. 1
	24590-LAW-M6-LOP-00002004, Rev. 1		24590-LAW-M6-LOP-00002004, Rev. 2
	24590-LAW-M6-LOP-00002005, Rev. 0		24590-LAW-M6-LOP-00002005, Rev. 1
	24590-LAW-M6-LOP-00004001, Rev. 0		24590-LAW-M6-LOP-00004001, Rev. 1
	24590-LAW-M6-LOP-00004002, Rev. 0		24590-LAW-M6-LOP-00004002, Rev. 1
	24590-LAW-M6-LOP-00005001, Rev. 0		24590-LAW-M6-LOP-00005001, Rev. 1
	24590-LAW-M6-LOP-00005002, Rev. 0		24590-LAW-M6-LOP-00005002, Rev. 1
<p>This modification requests Ecology approval and incorporation into the permit the specific changes to the P&IDs. These drawings include changes provided in applicable document change forms (e.g., DCN, SCN, SDDR, FCN, FCR, etc.). In addition, the P&IDs include changes associated with the resolution to comments on change documents since the issuance of the last revision of the permitted drawings.</p> <p>Changes to the P&ID (24590-LAW-M6-LOP-00001001, Rev. 1) for the Melter 1 Submerged Bed Scrubber (LOP-SCB-00001) are summarized below:</p> <ul style="list-style-type: none"> • Added or modified notes in the Notes section. Revised the References section. • Revised graphical representation/depiction to correctly show the chilled water foundation fieldbus actuated valve YV-2005 (Grids D2 to D3 and E2 to E3). • Revised graphical representation/depiction for remote radar level instrumentation LT-1011 and LT-1063 (Grid C6). • Added tag number to purge air flow rate indicator (rotameter) FI-1065 (Grid D7). • Enhanced the instrumentation and control presentation of level indicator LI-1011 (Grid E4) and added instrument line connecting level switch (high-high) LSHH-1063 and level switch (low-low) LSL-1063 (Grid E3). • Changed valve symbol from gate valve to ball valve for ISA-V-68950, ISA-V-68959, ISA-V-69750 and ISA-V-69751 (Grids B3, D3 and F7). • Changed diameter size of valve LOP-V-34050 from ¾" to ½" (Grid D7). • Added nozzle N23A (Grid B5). • Added, revised or deleted off-sheet connectors (multiple grids). • Incorporated changes from change documentation identified in the Notes section. <p>Changes to the P&ID (24590-LAW-M6-LOP-00001002, Rev. 1) for the Melter 1 Submerged Bed Scrubber (SBS) Condensate Vessel (LOP-VSL-00001) are summarized below:</p> <ul style="list-style-type: none"> • Added or modified notes in the Notes section. Revised the References section. • Added LOP-HS-1154 and LOP-HS-1155 to automatically start pumps LOP-PMP-00001 and LOP-PMP-00002 and automatically open valves LOP-YV-1090 and LOP-YV-1091 (Grids F7 and H7). 			

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- Added the label "A/M" (auto/manual selector switch on operator display faceplate) for hand (manual) switches (Grids D5, D6, F7 and H7).
- Deleted instrumentation LOP-LSL-1018A (Grid E6).
- Moved off-sheet connector for level switch (high-high) LSHH-1011 and changed instrumentation control strategy by the addition, modification or deletion of instrumentation, lines, and valves (multiple grids).
- Revised graphical representation/depiction for remote radar level instrumentation LT-1018 (Grid C7).
- Changed valve symbol from gate valve to ball valve for ISA-V-68956, ISA-V-68957, ISA-V-69752, ISA-V-72509 and ISA-V-72510 (Grids B3, F6 to F7 and G6 to G7).
- Added seismic and quality flags for valves YV-1156 and YV-1157 (Grids F6 and G6).
- Updated the maximum operating volume for vessel LOP-VSL-00001 (Grid H5).
- Moved blind flanges closer to the nozzles (Grids B4 to B7).
- Added or moved piping labels closer to the nozzles (Grids B4 to B5 and C5 to C6).
- Changed valve symbol from 3-way ball valve to 3-way plug ball valve for ISA-V-34120 (Grid C3).
- Revised or moved off-sheet connectors (multiple grids).
- Incorporated changes from change documentation identified in the Notes section.

Changes to the P&ID (24590-LAW-M6-LOP-00001004, Rev. 2) for the Melter 1 Wet Electrostatic Precipitator (LOP-WESP-00001) are summarized below:

- Added or modified notes in the Notes section. Revised the References section.
- Revised graphical representation/depiction for remote radar level instrumentation LT-1059 and LT-1060 (Grid E3).
- Deleted seismic and quality flags near valves ISA-V-68969 and ISA-V-68970 (Grids D7 and E5).
- Added nozzle N32 (Grid E4).
- Added "locked open (LO)" label for valve LVP-V-09495 (Grid B4).
- Revised instrumentation control strategy by the addition of instrumentation, lines, and valves (multiple grids).
- Changed valve symbol from ball valve to globe valve for LOP-V-10760 (Grid C5).
- Added or revised off-sheet connectors (multiple grids).
- Incorporated changes from change documentation identified in the Notes section.

Changes to the P&ID (24590-LAW-M6-LOP-00001005, Rev. 1) for the Melter 1 Film Cooler Offgas are summarized below:

- Added notes in the Notes section. Revised the References section.
- Added equipment identification labels (Grids H2 to H8).
- Changed valve symbol from gate valve to ball valve for ISA-V-68947 and ISA-V-68948 (Grids E4 and G6).
- Deleted seismic and quality flags near valve ISA-V-68948 (Grid E4).
- Deleted temperature indicators TI-1152 and TI-1153 and associated instrumentation and lines (Grids B6 to B8, C6 to C8 and D2 to D8).
- Added, revised or deleted off-sheet connectors (multiple grids).
- Incorporated changes from change documentation identified in the Notes section.

Changes to the P&ID (24590-LAW-M6-LOP-00002001, Rev. 1) for the Melter 2 Submerged Bed Scrubber (LOP-SCB-00002) are summarized below:

- Added or modified notes in the Notes section. Revised the References section.
- Revised graphical representation/depiction to correctly show the chilled water foundation fieldbus actuated valve YV-2006 (Grids D2 to D3 and E2 to E3).
- Revised graphical representation/depiction for remote radar level instrumentation LT-2011 and LT-2063 (Grid C6).
- Added tag number to purge air flow rate indicator (rotameter) FI-2065 (Grid D7).
- Enhanced the instrumentation and control presentation of level indicator LI-2011 (Grid E4) and added instrument line connecting level switch (high-high) LSHH-2063 and level switch (low-low) LSL-2063 (Grid E3).

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- Changed valve symbol from gate valve to ball valve for ISA-V-69421, ISA-V-69422, ISA-V-69757 and ISA-V-69758 (Grids B3, D3 and F7).
- Changed diameter size of valve LOP-V-34051 from ¾" to ½" (Grid D7).
- Added nozzle N23A (Grid B5).
- Changed line number (DIW-WE-00085-S11C-02-B10) (Grid B8).
- Added, revised or deleted off-sheet connectors (multiple grids).
- Incorporated changes from change documentation identified in the Notes section.

Changes to the P&ID (24590-LAW-M6-LOP-00002002, Rev. 1) for the Melter 2 Submerged Bed Scrubber (SBS) Condensate Vessel (LOP-VSL-00002) are summarized below:

- Added or modified notes in the Notes section. Revised the References section.
- Added LOP-HS-2154 and LOP-HS-2155 to automatically start pumps LOP-PMP-00004 and LOP-PMP-00005 and automatically open valves LOP-YV-2090 and LOP-YV-2091 (Grids F7 and H7).
- Added the label "A/M" (auto/manual selector switch on operator display faceplate) for hand (manual) switches (Grids D5, D6, F7 and H7).
- Deleted instrumentation LOP-LSL-2018A (Grid E6).
- Moved off-sheet connector for level switch (high-high) LSHH-2011 and changed instrumentation control strategy by the addition, modification or deletion of instrumentation, lines, and valves (multiple grids).
- Revised graphical representation/depiction for remote radar level instrumentation LT-2018 (Grid C7).
- Changed valve symbol from gate valve to ball valve for ISA-V-69428, ISA-V-69650, ISA-V-69759, ISA-V-72511 and ISA-V-72512 (Grids B3, D3, F6 to F7 and G6 to G7).
- Added seismic and quality flags for valves YV-2156 and YV-2157 (Grids F6 and G6).
- Updated the maximum operating volume for vessel LOP-VSL-00002 (Grid H5).
- Moved blind flanges closer to the nozzles (Grids B4 to B7).
- Added or moved piping labels closer to the nozzles (Grids B4 to B5 and C5 to C6).
- Changed valve symbol from 3-way ball valve to 3-way plug ball valve for ISA-V-34122 (Grid C3).
- Revised the diameter size from ½" to 1½" for piping LOP-GR-00005-S11P-011/2 (Grid C6).
- Revised or moved off-sheet connectors (multiple grids).
- Incorporated changes from change documentation identified in the Notes section.

Changes to the P&ID (24590-LAW-M6-LOP-00002004, Rev. 2) for the Melter 2 Wet Electrostatic Precipitator (LOP-WESP-00002) are summarized below:

- Added or modified notes in the Notes section. Revised the References section.
- Revised graphical representation/depiction for remote radar level instrumentation LT-2059 and LT-2060 (Grid D3).
- Deleted seismic and quality flags near valves ISA-V-69437 and ISA-V-69439 (Grids D7 and E5).
- Added nozzle N32 (Grid E4).
- Added "locked open (LO)" label for valve LVP-V-11979 (Grid B4).
- Revised instrumentation control strategy by the addition of instrumentation, lines, and valves (multiple grids).
- Changed valve symbol from ball valve to globe valve for LOP-V-10575 (Grid C5).
- Added or revised off-sheet connectors (multiple grids).
- Incorporated changes from change documentation identified in the Notes section.

Changes to the P&ID (24590-LAW-M6-LOP-00002005, Rev. 1) for the Melter 2 Film Cooler Offgas are summarized below:

- Added notes in the Notes section. Revised the References section.
- Added equipment identification labels (Grids H2 to H8).
- Changed valve symbol from gate valve to ball valve for ISA-V-69440 (Grid E4).
- Deleted seismic and quality flags near valve ISA-V-69440 (Grid E4).
- Deleted temperature indicators TI-2152 and TI-2153 and associated instrumentation and lines (Grids B6 to B8, C6 to C8 and D2 to D8).

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24590-LAW-PCN-ENV-17-012

- Added, revised or deleted off-sheet connectors (multiple grids).
- Incorporated changes from change documentation identified in the Notes section.

Changes to the P&ID (24590-LAW-M6-LOP-00004001, Rev. 1) for the Melter 1 Standby Offgas Film Cooler (LOP-FCLR-00002) are summarized below:

- Added notes in the Notes section. Revised the References section.
- Added new Table 1 (Grid H3).
- Added 1" reducers upstream and downstream of flow rate transmitter FT-1218 (Grids E6 and F6).
- Added Foundation Fieldbus converter FY-1218 and revised FT-1218 (Grid F6).
- Revised instrumentation control strategy by the addition of instrumentation, lines, and valves (multiple grids).
- Changed valve symbol from gate valve to ball valve for ISA-V-68798 through ISA-V-68806 (Grids B7, C3 to C5, E6 to E7, F7 and G7).
- Deleted seismic and quality flags near film cooler LOP-FCLR-00002 and LOP valves ISA-V-68798, ISA-V-68799 and ISA-V-68802 (Grids A4, B7 and G7).
- Added valve YV-1406 and associated instrumentation and lines (Grids A6 to A8, B6 to B8 and C6 to C8).
- Revised the diameter size from 2" to 3" for air injection piping LOP-GQ-01502-S11C-03 upstream of film cooler LOP-FCLR-00002 (Grid A4).
- Added, revised or deleted off-sheet connectors (multiple grids).
- Incorporated changes from change documentation identified in the Notes section.

Changes to the P&ID (24590-LAW-M6-LOP-00004002, Rev. 1) for the Melter 1 Primary Offgas Film Cooler (LOP-FCLR-00001) are summarized below:

- Added or modified notes in the Notes section. Revised the References section.
- Added new Table 1 (Grid F2).
- Changed valve symbol from gate valve to ball valve for ISA-V-69699, ISA-V-69700 and ISA-V-68793 through ISA-V-68797 (Grids D4 to D8, F3 and F5).
- Revised instrumentation control strategy by the addition of instrumentation, lines, and valves (multiple grids).
- Added 1½" reducers upstream and downstream of flow rate transmitter FT-1113 and new piping LOP-GQ-33408-S11C-011/2. Replaced LOP-GQ-33408-S11C-003/4-B05 with LOP-GQ-33408-S11C-003/4-B01 (Grids F3 and G3).
- Deleted seismic and quality flags near film cooler LOP-FCLR-00001 and LOP valve ISA-V-68797 (Grids A5 and D4).
- Added valve YV-1407 and associated instrumentation and lines (Grids B3 to B4, C2 to C4, D2 to D4 and E4 to E8).
- Added label for piping LOP-GQ-33408-S11C-03 (Grid C3).
- Added, revised or deleted off-sheet connectors (multiple grids).
- Incorporated changes from change documentation identified in the Notes section.

Changes to the P&ID (24590-LAW-M6-LOP-00005001, Rev. 1) for the Melter 2 Standby Offgas Film Cooler (LOP-FCLR-00004) are summarized below:

- Added notes in the Notes section. Revised the References section.
- Added new Table 1 (Grid H3).
- Added 1" reducers upstream and downstream of flow rate transmitter FT-2218 (Grids E6 and F6).
- Added Foundation Fieldbus converter FY-2218 (Grid F6).
- Revised instrumentation control strategy by the addition of instrumentation, lines, and valves (multiple grids).
- Changed valve symbol from gate valve to ball valve for ISA-V-68784 through ISA-V-68792 (Grids B7, C3 to C5, E6 to E7, G7 and H7).
- Deleted seismic and quality flags near film cooler LOP-FCLR-00004 and LOP valves ISA-V-68784, ISA-V-68785 and ISA-V-68788 (Grids A4, B7, G7 and H7).

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24590-LAW-PCN-ENV-17-012

- Added valve YV-2406 and associated instrumentation and lines (Grids A6 to A7, B6 to B8 and C6 to C8).
- Revised the diameter size from 2" to 3" for air injection piping LOP-GQ-33421-S11C-03 upstream of film cooler LOP-FCLR-00004 (Grid A4).
- Added, revised or deleted off-sheet connectors (multiple grids).
- Incorporated changes from change documentation identified in the Notes section.

Changes to the P&ID (24590-LAW-M6-LOP-00005002, Rev. 1) for the Melter 2 Primary Offgas Film Cooler (LOP-FCLR-00003) are summarized below:

- Added or modified notes in the Notes section. Revised the References section.
- Added new Table 1 (Grid G3).
- Changed valve symbol from gate valve to ball valve for ISA-V-69476, ISA-V-69477 and ISA-V-68779 through ISA-V-68783 (Grids C4, D5 to D8 and E3 to E4).
- Revised instrumentation control strategy by the addition of instrumentation, lines, and valves (multiple grids).
- Added 1½" reducers upstream and downstream of flow rate transmitter FT-2113 and new piping LOP-GQ-03316-S11C-011/2. Replaced LOP-GQ-03316-S11C-003/4-B04 with LOP-GQ-03316-S11C-003/4-B01 (Grid F3).
- Deleted seismic and quality flags near film cooler LOP-FCLR-00003 and LOP valve ISA-V-68782 (Grids A5 and C4).
- Added valve YV-2407 and associated instrumentation and lines (Grids B4, C2 to C4, D2 to D4 and E5 to E8).
- Added label for piping LOP-GQ-03316-S11C-03 (Grid C3).
- Relocated reducer further downstream of LOP-V-10833 and flow rate transmitter FT-2140 (Grids F4 and G4).
- Added, revised or deleted off-sheet connectors (multiple grids).
- Incorporated changes from change documentation identified in the Notes section.

This PCN updates information in Appendix 9.2 to reflect current design. These DWP components may be re-evaluated to confirm design adequacy. If the re-evaluation results in future design changes, the changes will be reviewed by Ecology in subsequent permit modifications.

The following outstanding change documents have been submitted to Ecology pursuant to Permit Condition III.10.C.9.h and are maintained in the WTP Operating Record:

None

In accordance with Permit Condition III.10.C.2.e, this permit modification sent to Ecology may include page changes to the Permit, attachments, and permit application supporting documentation.

Quarter Ending March 2018

24590-LAW-PCN-ENV-17-012

WAC 173-303-830 Modification Class:	Class 1	Class 11	Class 2	Class 3
Please mark the Modification Class:		X		

Enter relevant WAC 173-303-830, Appendix I Modification citation number: N/A	
Enter wording of WAC 173-303-830, Appendix I Modification citation:	
<p>In accordance with WAC 173-303-830(4)(d)(i), this modification notification is requested to be reviewed and approved as a Class 11 modification. WAC 173-303-830(4)(d)(ii)(A) states, "Class 1 modifications apply to minor changes that keep the permit current with routine changes to the facility or its operation. These changes do not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment. In the case of Class 1 modifications, the director may require prior approval."</p>	
Modification Approved/Concur: <input type="checkbox"/> Yes <input type="checkbox"/> Denied (state reason below) Reason for denial:	Reviewed by Ecology: _____ S. Dahl Date

LOP-SCB-00001
MELTER 1
SUPERHEATED
RED SCRUBBER (SBS)
1.2 MMETU/HR
10' 0" ID x 6' 6" T-1

NOTES:

- SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
- CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
- THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL Q AND SEISMIC CATEGORY SC-II, UNLESS OTHERWISE NOTED.
- ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
- HALF PIPE JACKET.
- INSULATION BY VENDOR.
- RADAR GUIDE TUBE TO BE ROUTED TO TRANSMITTER LOCATED ON THE FLOOR ABOVE.
- INSTRUMENT PERFORMS AN AIR PERMIT FUNCTION. INDICATION DISPLAYED AT PCJ.
- LOCATE TAP FOR PT-1065 AS CLOSE TO LOP-SCB-00001 AS POSSIBLE. PT-1065 IS BY VENDOR.
- LINE INSIDE VESSEL SHALL HAVE A MINIMUM OF 3/8" INCH HOLE ABOVE THE TOP OF THE OVERFLOW PORT NOZZLES N04 AND N05 TO PREVENT BACK SIPHON.
- EMERGENCY OVERFLOW PIPE SHALL ATTACH TO TOP SIDE OF SBS OVERFLOW LINE APEX NOT TO EXCEED 10 INCHES ABOVE OVERFLOW LINE CENTER-TO-CENTER AFTER APEX. LINE SHALL SLOPE TO WESP DRAIN LINE.
- REMOVABLE SPOOL PIECE REMOVED WHEN MELTER IS PROCESSING WASTE. BLIND FLANGES ARE TO BE INSTALLED WHEN SPOOL PIECE IS REMOVED.
- THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-LAW-M6-LOP-00001 REV 5. CLOUDS DEPICT MAJOR CHANGES MADE FROM SUPERSEDED DRAWING. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAW-M6N-20-00001, 24590-LAW-M6N-LOP-000034, -000035, -00037, -00040, -00043, -00052, -00060, AND 24590-LAW-M6PR-LOP-00014.
- REVISION 1: INCORPORATED 24590-WTP-EIE-J-16-0001 (REV. 0), -0008 (REV. 0), 24590-LAW-EIE-NS-17-0001 (REV. 0), 24590-LAW-M6LN-LOP-00002, 24590-WTP-M6N-50-00073, 24590-LAW-M6N-20-00024, 24590-LAW-M6N-LOP-00013, -00066, -00067, 24590-LAW-M6N-MB0T-00016, AND -00038. ADDED/REVISED CONTROL SYSTEMS, SPOOL NUMBERS, HOLDS, REFERENCE I ADR REVISION NUMBER ON THE TITLE BLOCK, AND OFF SHEET CONNECTORS. PROVIDED QUALITY BREAK FOR LOP-PT-1065 PURGE AIR SUPPLY AS REQUESTED BY 24590-WTP-FC-IN-0038.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

- 24590-LAW-3ZD-LOP-00001, LAW PRIMARY OFFGAS (LOP) AND SECONDARY OFFGAS/VESSEL VENT (LVP) SYSTEM DESIGN DESCRIPTION.

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U.S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on non-nuclear is provided for process description purposes only.

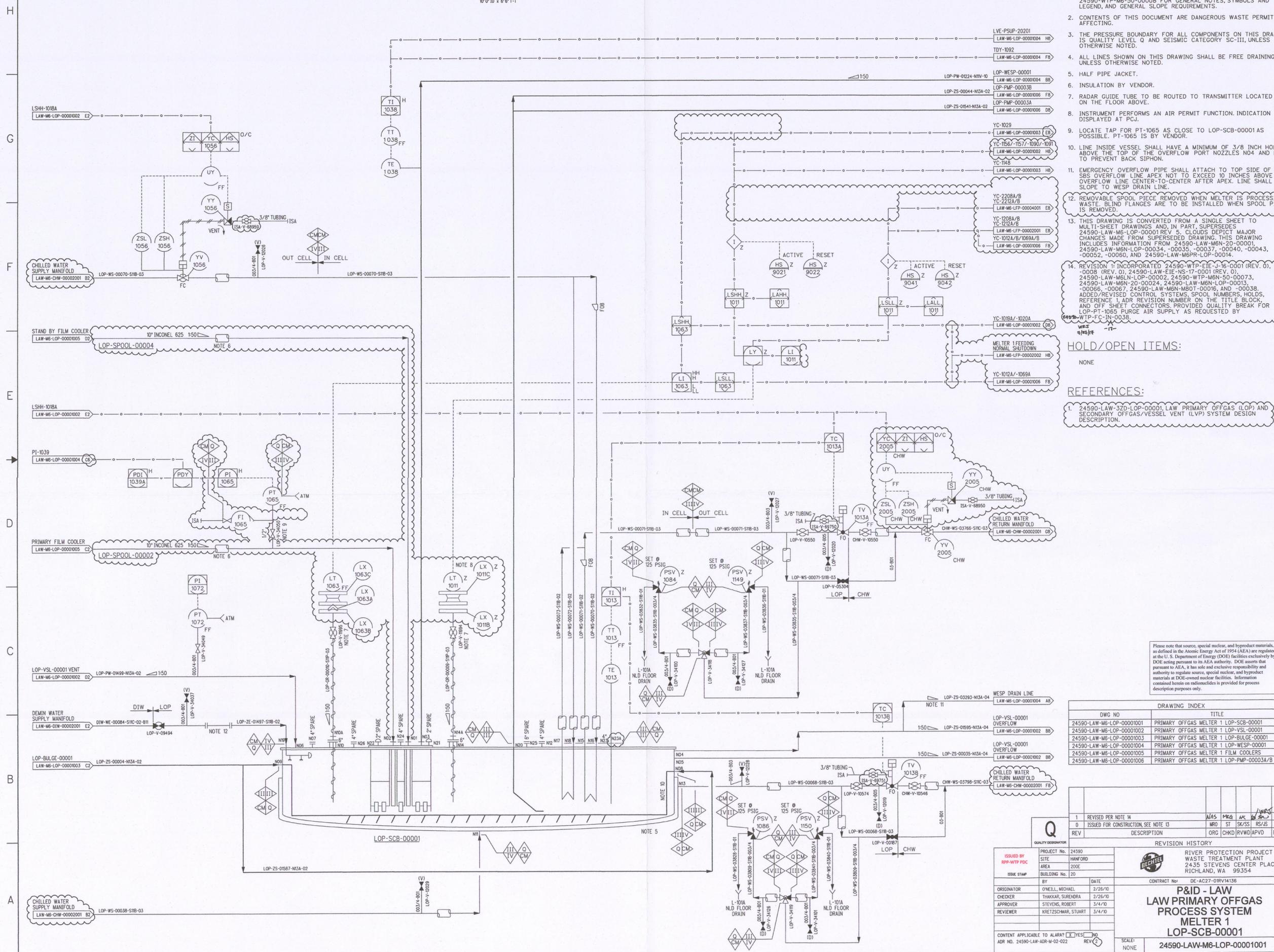
DWG NO	TITLE
24590-LAW-M6-LOP-00001001	PRIMARY OFFGAS MELTER 1 LOP-SCB-00001
24590-LAW-M6-LOP-00001002	PRIMARY OFFGAS MELTER 1 LOP-VSL-00001
24590-LAW-M6-LOP-00001003	PRIMARY OFFGAS MELTER 1 LOP-BULGE-00001
24590-LAW-M6-LOP-00001004	PRIMARY OFFGAS MELTER 1 LOP-WESP-00001
24590-LAW-M6-LOP-00001005	PRIMARY OFFGAS MELTER 1 FILM COOLERS
24590-LAW-M6-LOP-00001006	PRIMARY OFFGAS MELTER 1 LOP-PMP-00003A/B

REV	DESCRIPTION	ORG	CHKD	REV'D	APVD	DATE
1	REVISED PER NOTE 14	NAS	MGB	AK	JWS	7/27/17
0	ISSUED FOR CONSTRUCTION. SEE NOTE 13	MRO	ST	SK/SS	RS/JS	3/4/10

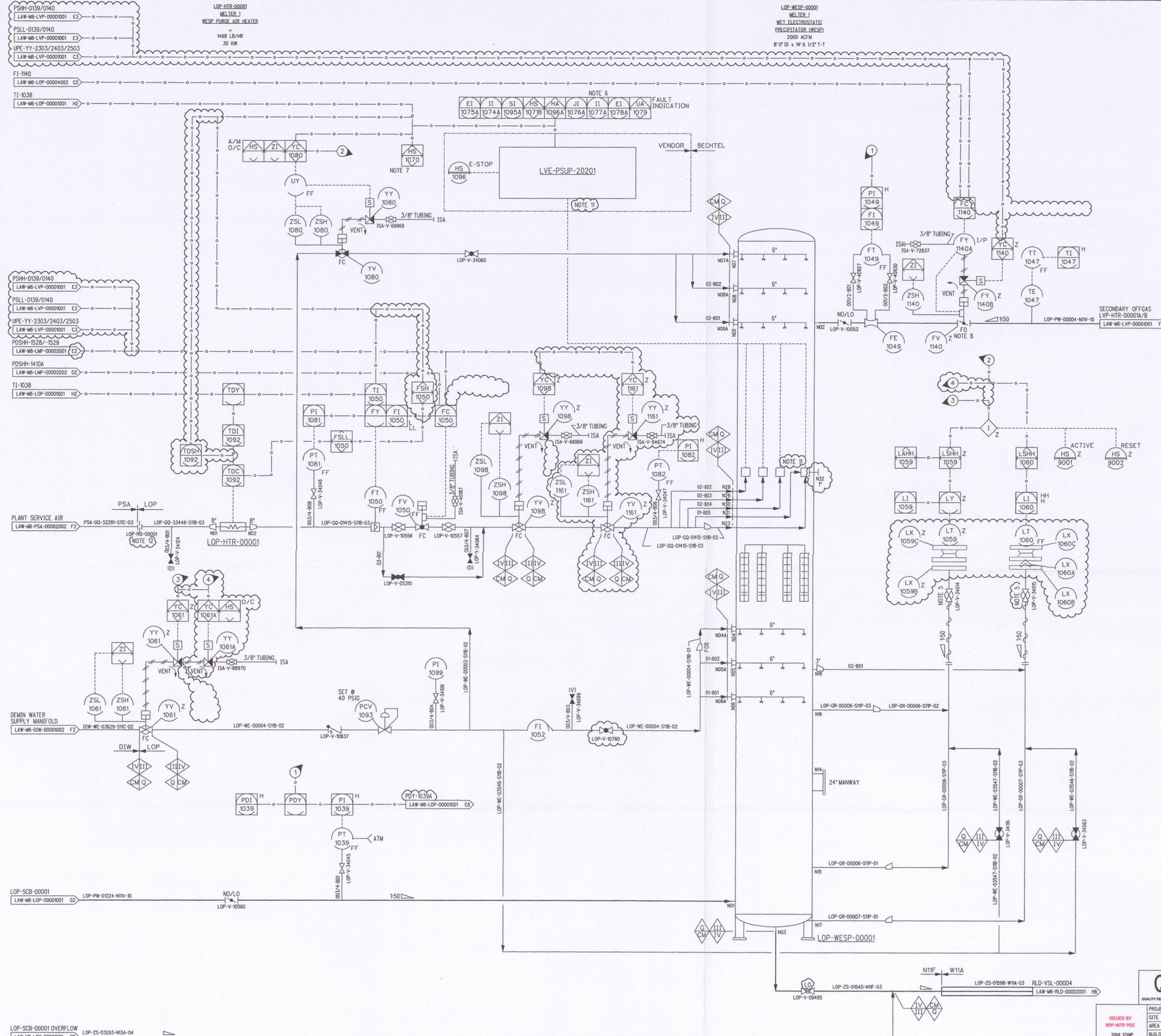
ISSUED BY	PROJECT No.	DATE
ISSUE STAMP	24590	2/26/10
ORIGINATOR	O'NEILL, MICHAEL	2/26/10
CHECKER	THAKKAR, SURENDRA	2/26/10
APPROVER	STEVENS, ROBERT	3/4/10
REVIEWER	KRETZSCHMAR, STUART	3/4/10

SCALE	DATE
NONE	7/11/2017 9:52:53 AM

24590-LAW-M6-LOP-00001001



PLOTTED BY: smlumque



- NOTES:**
- SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
 - CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
 - THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL Q AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
 - ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
 - RADAR GUIDE TUBE TO BE ROUTED TO TRANSMITTER LOCATED ON THE FLOOR ABOVE.
 - INSTRUMENT PERFORMS AN AIR PERMIT FUNCTION INDICATION DISPLAYED AT PCJ.
 - LOP-WESP-00001 WASH SEQUENCE HAND SWITCH.
 - VALVE/ACTUATOR ASSEMBLY SUPPLIED WITH ADJUSTABLE STOP TO PREVENT FULL CLOSURE.
 - THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-LAW-M6-LOP-00001 REV 5. CHANGES DEPICT MAJOR CHANGES MADE FROM SUPERSEDED DRAWING. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAW-M6N-20-00001, 24590-LAW-M6N-LOP-00008, -00033, -00037, -00040, -00051, -00052, -00060, 24590-LAW-M6PW-00004, -00013, -00015, 24590-LAW-M6PR-LOP-00003, AND -00009, PCV-1093 SET PRESSURE HAS BEEN REVISED FROM 60 PSIG TO 40 PSIG.
 - REVISION 1: INCORPORATED 24590-LAW-M6LN-LOP-00005, 24590-LAW-M6N-LOP-00013, -00063, -00066, -00069, -00070, -00071, -00075, AND 24590-LAW-M6N-MB01-00016, REVISED OFF SHEET CONNECTOR, ADDED ROOT VALVES AND BRANCH NUMBERS, CHANGED VALVE POSITION FROM 'NO' TO 'NO/LO', NOZZLE N31, AND CONNECTING PIPE SIZE FROM 2" TO 4". THIS P&ID HAS BEEN REVIEWED BY E&NS FOR ALL LIMITED AND PHYSICALIZATION CHANGE DOCUMENTS THAT WERE PREVIOUSLY ISSUED (SEE CCN 251622).
 - THE WESP INTERNAL SUBCOMPONENTS INCLUDING THE ELECTRODES, INSULATORS, COLLECTOR TUBE BUNDLE, AND ELECTRODE POWER SUPPLY, LVE-PSUP-20201, ARE CONFIRMED AS CM WITH QUALITY LEVEL DETERMINATION, QDF'S (24590-LAW-QDF-MS-15-0001, 24590-LAW-QDF-MS-14-0002, AND -0003).
 - RESTRICTION ORIFICE (RO) EXISTS TO PROVIDE FLEXIBILITY FOR FUTURE DESIGN. NO PRESSURE DROP ACROSS THE RO IS REQUIRED IN CURRENT DESIGN. THE RO DOES NOT PROVIDE FLOW RESTRICTION (I.e., β=0) AND NO SIZING BASIS IS THEREFORE REQUIRED.
 - REVISION 2: INCORPORATED 24590-WTP-EIE-J-16-0001 (REV. 0), 24590-LAW-EIE-NS-17-0001 (REV. 0), 24590-WTP-M6N-50-00073, 24590-LAW-M6N-MB01-00033, 24590-LAW-M6N-LOP-00099, -00102, -00104, AND -00106, REVISED REFERENCE 1, LOP-V-10760 BALL VALVE TO GLOBE VALVE, ADR REVISION NUMBER ON THE TITLE BLOCK, OFF SHEET CONNECTOR, ADDED NOTES 11 AND 12, LINE NUMBERS, AND CONTROL SYSTEMS PER PSDA UPDATE. ADDED TDSH-1092 AND FSH-1050.

HOLD/OPEN ITEMS:
NONE

REFERENCES:
1. 24590-LAW-32D-LOP-00001, LAW PRIMARY OFFGAS (LOP) AND SECONDARY OFFGAS/VESSEL VENT (LVP) SYSTEM DESIGN DESCRIPTION.

Please note that sources, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radioisotopes is provided for process description purposes only.

REV	DESCRIPTION	ORG	CHKD	RWMD	APVD	DATE
2	REVISED PER NOTE 13	NAS	MRS	AK	MS	7/27/17
1	REVISED PER NOTE 10	MRS	RST	BL/K	SK/JW	10/13/14
0	ISSUED FOR CONSTRUCTION, SEE NOTE 9	MRO	SJ	SK/WJ	RS/SJ	3/4/10

ISSUED BY	PROJECT No.	DATE
ISSUED BY: RPP-WTP-PCC	24590	3/4/10
ISSUE STAMP	SITE: HANFORD	3/4/10
	AREA: 200C	3/4/10
	BUILDING No.: 20	3/4/10
ORIGINATOR: O'NEILL, MICHAEL	BY: DATE	3/4/10
CHECKER: JAIN, SATISH	DATE	3/4/10
APPROVER: STEVENS, R. SCHNEIDER, J.	DATE	3/4/10
REVIEWER: KRETZSCHMAR, UNDERHILL	DATE	3/4/10

CONTRACT No.	REVISION HISTORY
DE-AC27-01RV14138	
	RIVER PROTECTION PROJECT WASTE TREATMENT PLANT 2435 STEVENS CENTER PLACE RICHLAND, WA 99354
	P&ID - LAW LAW PRIMARY OFFGAS PROCESS SYSTEM MELTER 1 LOP-WESP-00001
	24590-LAW-M6-LOP-00001004

LOP-BLWS-00005 LAW_MELTER_1OFFGAS	LOP-SPOOL-00003 LAW_MELTER_1OFFGAS_SPOOL	LOP-BLWS-00004 LAW_MELTER_1OFFGAS	LOP-SPOOL-00001 LAW_MELTER_1OFFGAS_SPOOL	LOP-BLWS-00003 LAW_MELTER_1OFFGAS	LOP-SP-00003 10" SPECIAL RELIEF DEVICE	LOP-BLWS-00001 LAW_MELTER_1OFFGAS	LOP-SPOOL-00004 LAW_MELTER_1OFFGAS_SPOOL	LOP-BLWS-00002 LAW_MELTER_1OFFGAS	LOP-SPOOL-00002 LAW_MELTER_1OFFGAS_SPOOL
-	-	-	-	-	-	-	-	-	-

NOTES:

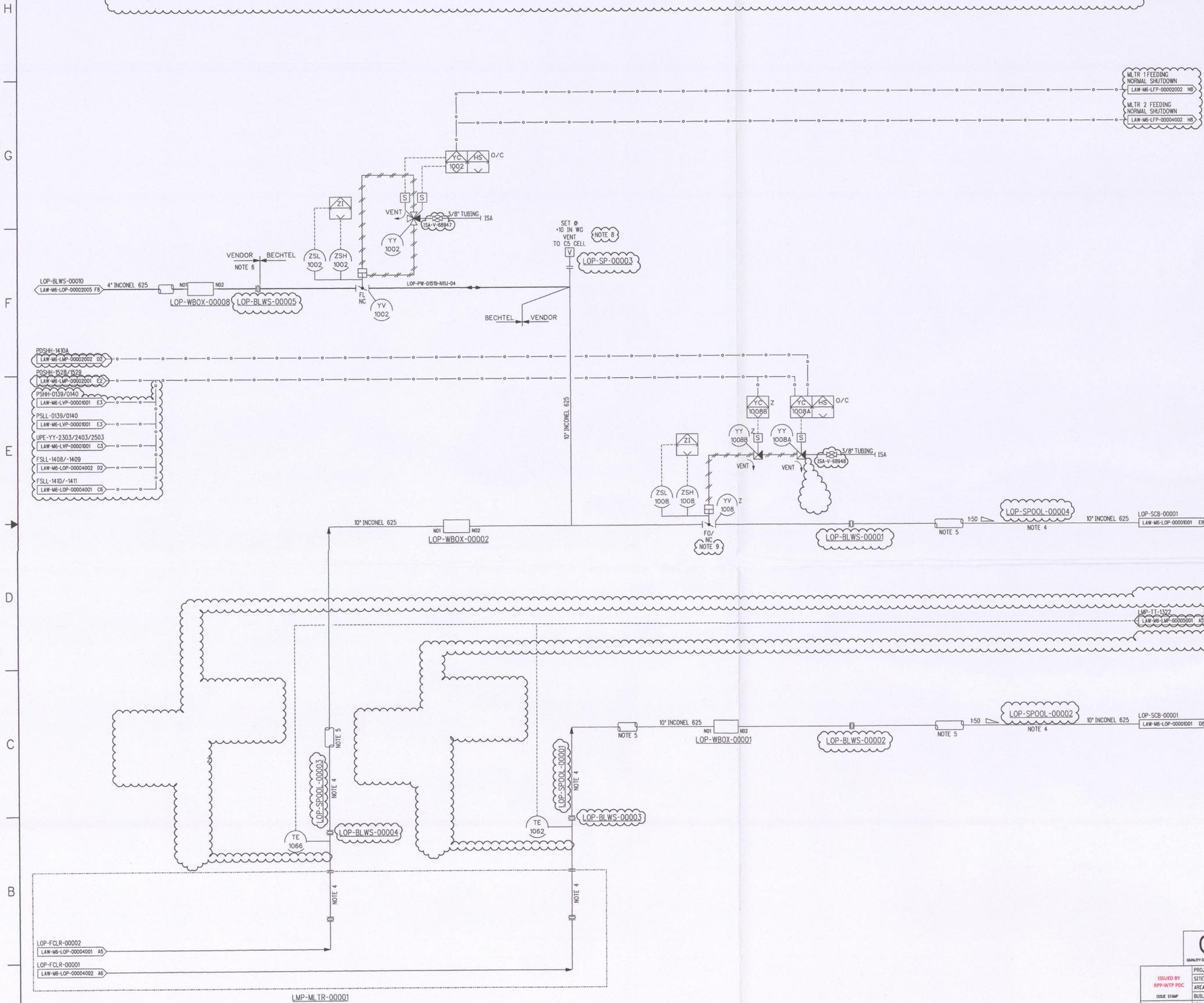
- SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
- CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
- THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL Q AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
- SPECIALLY ENGINEERED PIPING SPOOL WITH HILTAP COUPLING.
- INSULATION BY VENDOR.
- FOR VENDOR COMPONENT DETAILS SEE 24590-LAW-M61-P23T-00001.
- THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-LAW-M6-LOP-00001 REV 5. CLOUDS DEPICT MAJOR CHANGES MADE FROM SUPERSEDED DRAWING. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAW-M6N-LOP-00015, -00040, AND -00052.
- LOP-SP-00003 IS SAFETY SIGNIFICANT FOR FUNCTION.
- DO NOT INSULATE VALVE OR PIPE WITHIN 4" OF VALVE.
- REVISION 1: INCORPORATED 24590-LAW-EIE-NS-17-0001 (REV 0), 24590-LAW-M6N-LOP-00063, -00065, 24590-LAW-M6N-M801-00016, AND -00033. ADDED NOTES 8 AND 9. REVISED IN-LINE COMPONENT TAG NUMBERS TO EQUIPMENT TAG NUMBERS, REFERENCE 1, ADR REVISION NUMBER ON THE TITLE BLOCK, AND OFF SHEET CONNECTORS.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

- 24590-LAW-3ZD-LOP-00001, LAW PRIMARY OFFGAS (LOP) AND SECONDARY OFFGAS/VESSEL VENT (LVP) SYSTEM DESIGN DESCRIPTION.



PSHH-1410A
LAW-M6-LMP-00002002 DZ

PSHH-1410B
LAW-M6-LMP-00002001 E2

PSHH-0139/0140
LAW-M6-LVP-00001001 E3

PSLL-0139/0140
LAW-M6-LVP-00001001 E3

UPE-YY-2303/2403/2503
LAW-M6-LVP-00001001 C3

FSLL-1408/-1409
LAW-M6-LOP-00004002 D2

FSLL-1410/-1411
LAW-M6-LOP-00004001 C6

LOP-FCLR-00002
LAW-M6-LOP-00004001 A5

LOP-FCLR-00001
LAW-M6-LOP-00004002 A6

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

1	REVISED PER NOTE 10	NAS	MNS	AK	7/28/10	
0	ISSUED FOR CONSTRUCTION, SEE NOTE 7	MRO	ST	SK/SS/RS/S	3/4/10	
REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE

ISSUED BY: RFP-WTP-PDC
 PROJECT No: 24590
 SITE: HANFORD
 AREA: 200E
 BUILDING No: 20

ORIGINATOR: O'NEILL, MICHAEL 2/26/10
 CHECKER: THANKAR, SURENDRA 2/26/10
 APPROVER: STEVENS, ROBERT 3/4/10
 REVIEWER: KRETZSCHMAR, STUART 3/4/10

CONTRACT No: DE-AC27-09RV14136
 RIVER PROTECTION PROJECT
 WASTE TREATMENT PLANT
 2435 STEVENS CENTER PLACE
 RICHLAND, WA 99354

**P&ID - LAW
 LAW PRIMARY OFFGAS
 PROCESS SYSTEM
 MELTER 1
 FILM COOLER OFFGAS**

CONTENT APPLICABLE TO ALARA? YES NO
 ADR NO. 24590-LAW-ADR-M-02-022 REV 2

SCALE: NONE
 24590-LAW-M6-LOP-00001005
 7/11/2017 10:12:42 AM

LOP-SCB-00002
MELTER 2
SUBMERGED
BED SCRUMBER (SBS)
1.2 MMBTU/HR
10' O.D. x 6' 6" T-1

NOTES:

- SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
- CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
- THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL Q AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
- ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
- HALF PIPE JACKET.
- INSULATION BY VENDOR.
- RADAR GUIDE TUBE TO BE ROUTED TO TRANSMITTER LOCATED ON THE FLOOR ABOVE.
- INSTRUMENT PERFORMS AN AIR PERMIT FUNCTION, INDICATION DISPLAYED AT PCJ.
- LOCATE TAP FOR PT-2065 AS CLOSE TO LOP-SCB-00002 AS POSSIBLE. PT-2065 IS BY VENDOR.
- LINE INSIDE VESSEL SHALL HAVE A MINIMUM OF 3/8" INCH HOLE ABOVE THE TOP OF THE OVERFLOW PORT NOZZLES N04 AND N05 TO PREVENT BACK SIPHON.
- EMERGENCY OVERFLOW PIPE SHALL ATTACH TO TOP SIDE OF SBS OVERFLOW LINE APEX NOT TO EXCEED 10 INCHES ABOVE OVERFLOW LINE CENTER-TO-CENTER AFTER APEX. LINE SHALL SLOPE TO WESP DRAIN LINE.
- REMOVABLE SPOOL PIECE REMOVED WHEN MELTER IS PROCESSING WASTE. BLIND FLANGES ARE TO BE INSTALLED WHEN SPOOL PIECE IS REMOVED.
- THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-LAW-M6-L-OP-00002 REV 5. CLOUDS DEPICT MAJOR CHANGES MADE FROM SUPERSEDED DRAWING. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAW-M6N-20-00001, 24590-LAW-M6N-LOP-00034, -00035, -00043, AND -00053.
- REVISION 1 INCORPORATED 24590-WTP-EIE-J-16-0001 (REV. 0), -0008 (REV. 0), 24590-LAW-EIE-NS-17-0001 (REV. 0), 24590-LAW-M6N-L-OP-00002, 24590-WTP-M6N-50-00073, 24590-LAW-M6N-20-00024, 24590-LAW-M6N-LOP-00013, -00066, -00067, 24590-LAW-M6N-M80T-00016, AND -00038. ADDED/REVISED CONTROL SYSTEMS, SPOOL NUMBERS, HOLDS, OFF SHEET CONNECTORS, AND REVISION NUMBER ON THE TITLE BLOCK, BRANCH LINE AND REFERENCE 1: PROVIDED QUALITY BREAK FOR LOP-PT-2065 PURGE AIR SUPPLY AS REQUESTED BY WTP-FC-IN-17-00038.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

- 24590-LAW-32D-LOP-00001, LAW PRIMARY OFFGAS (LOP) AND SECONDARY OFFGAS/VESSEL VENT (LVP) SYSTEM DESIGN DESCRIPTION.

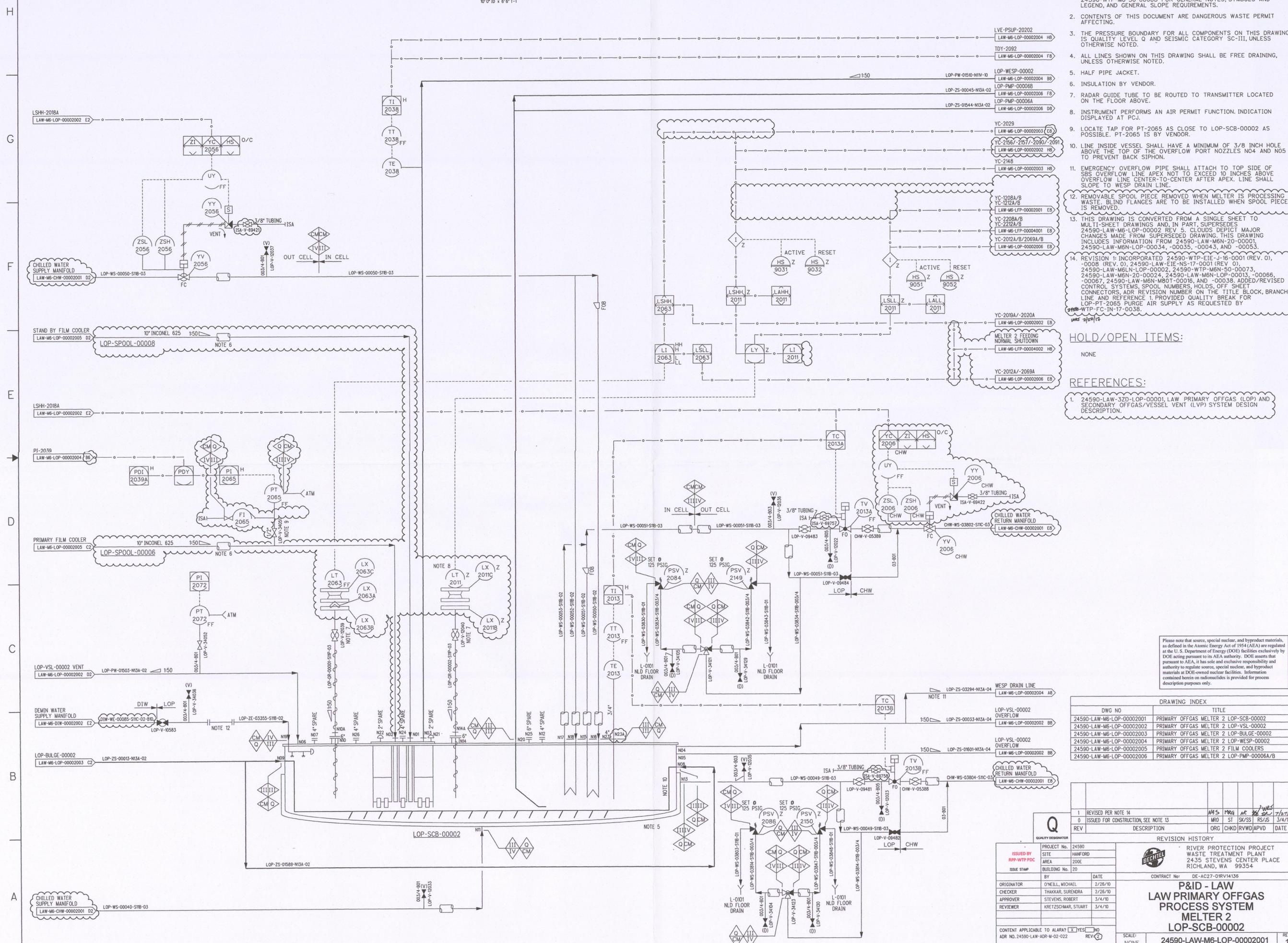
Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

DWG NO	TITLE
24590-LAW-M6-LOP-00002001	PRIMARY OFFGAS MELTER 2 LOP-SCB-00002
24590-LAW-M6-LOP-00002002	PRIMARY OFFGAS MELTER 2 LOP-VSL-00002
24590-LAW-M6-LOP-00002003	PRIMARY OFFGAS MELTER 2 LOP-BULGE-00002
24590-LAW-M6-LOP-00002004	PRIMARY OFFGAS MELTER 2 LOP-WESP-00002
24590-LAW-M6-LOP-00002005	PRIMARY OFFGAS MELTER 2 LOP-FILM COOLERS
24590-LAW-M6-LOP-00002006	PRIMARY OFFGAS MELTER 2 LOP-PMP-00006A/B

REV	DESCRIPTION	ORG	CHKD	RWVD	APVD	DATE
1	REVISED PER NOTE 14	MRS	MRA	MR	MS	7/6/17
0	ISSUED FOR CONSTRUCTION, SEE NOTE 13	MRO	ST	SK/SJ	RS/JS	3/4/10

ISSUED BY		DATE	
ISSUED BY	DATE	ISSUED BY	DATE
BY	DATE	BY	DATE
CHECKER	DATE	CHECKER	DATE
APPROVER	DATE	APPROVER	DATE
REVIEWER	DATE	REVIEWER	DATE

SCALE: NONE
24590-LAW-M6-LOP-00002001
REV 1



NOTES:

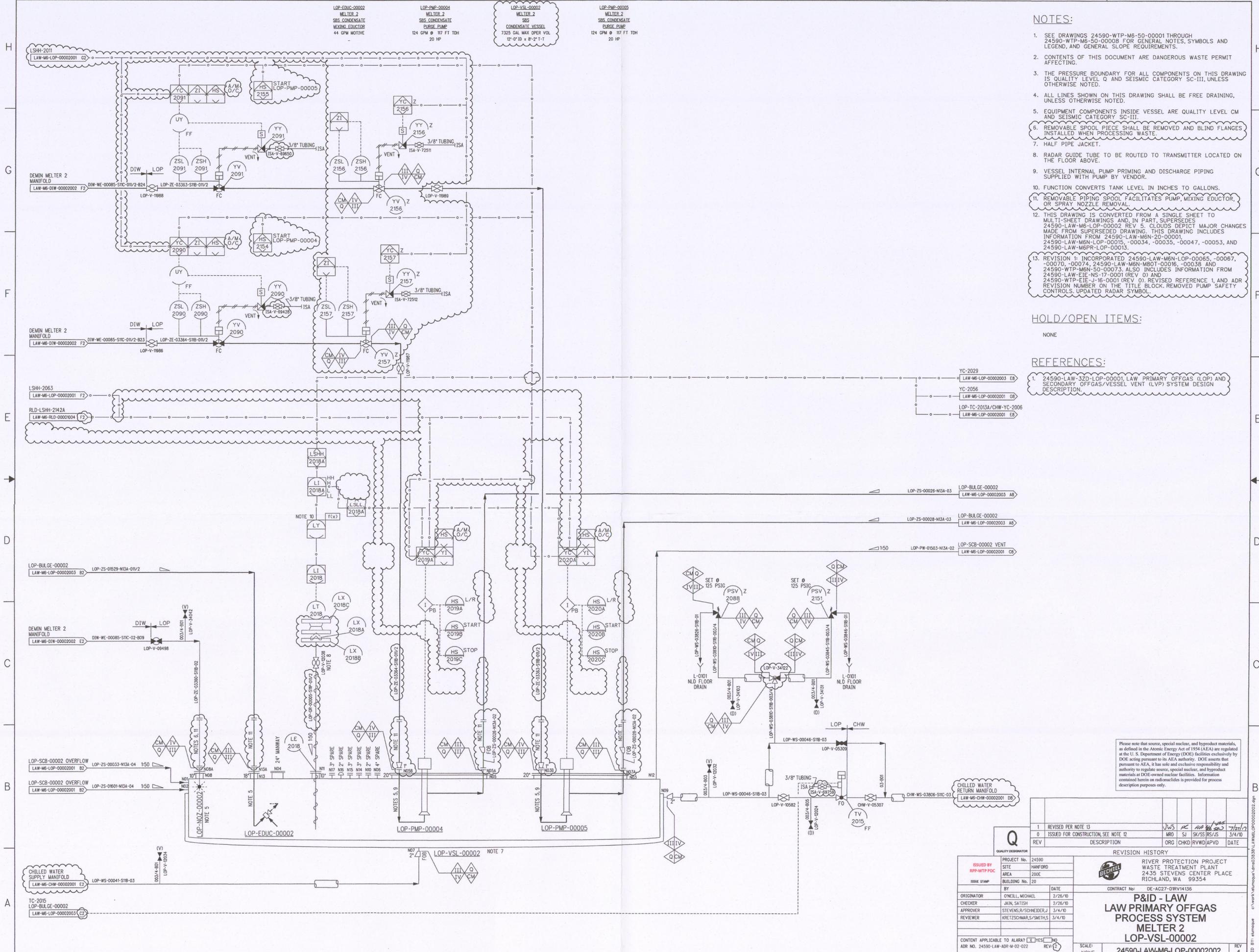
- SEE DRAWINGS 24590-WTP-M6-S0-00001 THROUGH 24590-WTP-M6-S0-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
- CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
- THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL Q AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
- ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
- EQUIPMENT COMPONENTS INSIDE VESSEL ARE QUALITY LEVEL CM AND SEISMIC CATEGORY SC-III.
- REMOVABLE SPOOL PIECE SHALL BE REMOVED AND BLIND FLANGES INSTALLED WHEN PROCESSING WASTE.
- HALF PIPE JACKET.
- RADAR GUIDE TUBE TO BE ROUTED TO TRANSMITTER LOCATED ON THE FLOOR ABOVE.
- VESSEL INTERNAL PUMP PRIMING AND DISCHARGE PIPING SUPPLIED WITH PUMP BY VENDOR.
- FUNCTION CONVERTS TANK LEVEL IN INCHES TO GALLONS.
- REMOVABLE PIPING SPOOL FACILITATES PUMP, MIXING EDUCTOR, OR SPRAY NOZZLE REMOVAL.
- THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-LAW-M6-LOP-00002 REV 5. CLOUDS DEPICT MAJOR CHANGES MADE FROM SUPERSEDED DRAWING. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAW-M6N-20-00001, 24590-LAW-M6N-LOP-00015, -00034, -00035, -00047, -00053, AND 24590-LAW-M6PR-LOP-00013.
- REVISION 1: INCORPORATED 24590-LAW-M6N-LOP-00065, -00067, -00070, -00074, 24590-LAW-M6N-M801-00016, -00038 AND 24590-WTP-M6N-S0-00073. ALSO INCLUDES INFORMATION FROM 24590-LAW-EIE-NS-17-0001 (REV 0) AND 24590-WTP-EIE-J-16-0001 (REV 0). REVISED REFERENCE 1, AND ADR REVISION NUMBER ON THE TITLE BLOCK. REMOVED PUMP SAFETY CONTROLS. UPDATED RADAR SYMBOL.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

- 24590-LAW-3ZD-LOP-00001 LAW PRIMARY OFFGAS (LOP) AND SECONDARY OFFGAS/VESSEL VENT (LVP) SYSTEM DESIGN DESCRIPTION



Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U.S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radioisotopes is provided for process description purposes only.

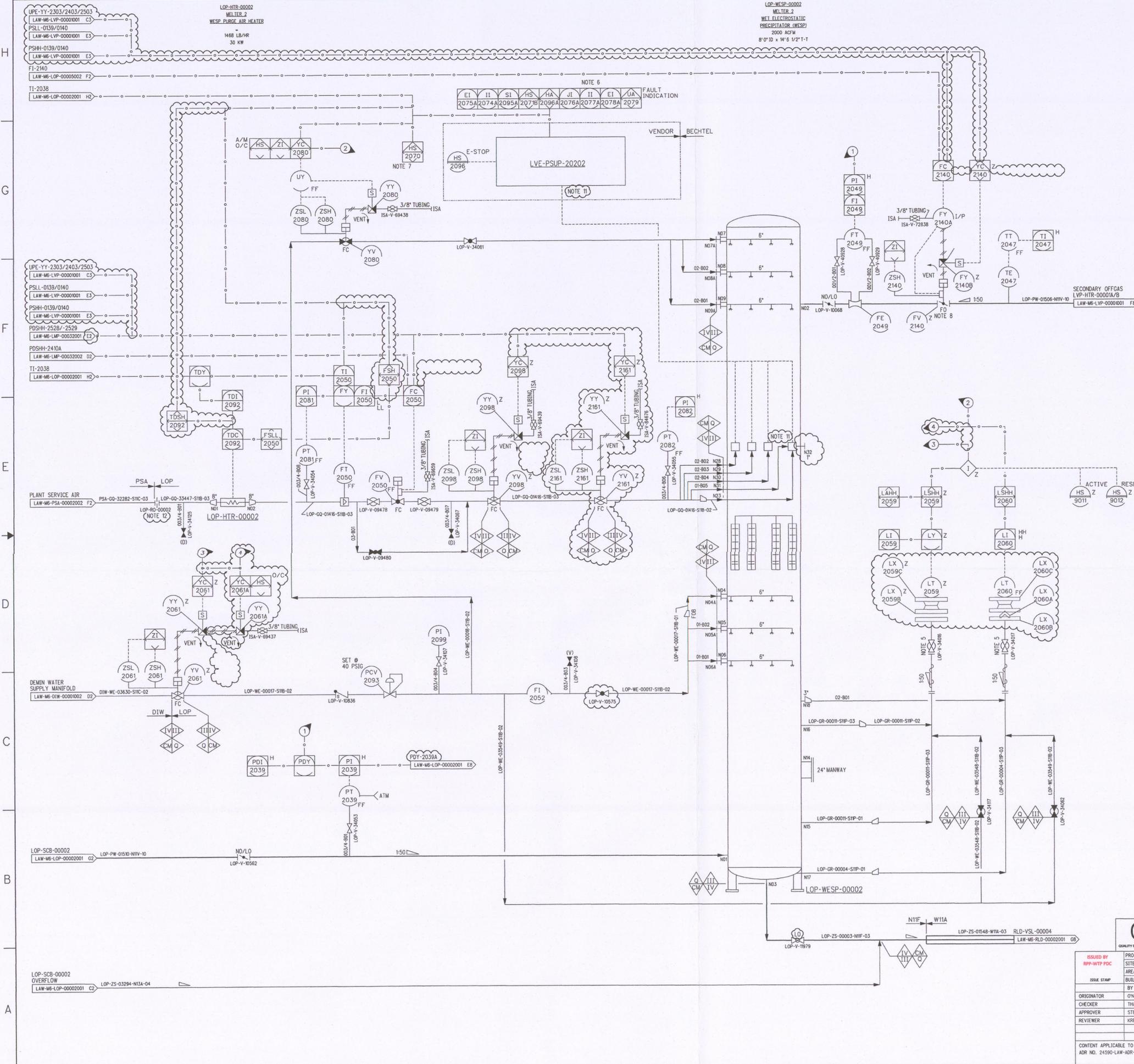
REV	DESCRIPTION	ORG	CHKD	RWD	APVD	DATE
1	REVISED PER NOTE 13	JUS	MC	AW	WBS	7/11/10
0	ISSUED FOR CONSTRUCTION, SEE NOTE 12	MRO	SJ	SK/SS	RS/JUS	3/4/10

ISSUED BY		DATE	
ORIGINATOR	O'NEILL, MICHAEL	DATE	2/26/10
CHECKER	JAIN, SATISH	DATE	2/26/10
APPROVER	STEVENS, R/SCHNEIDER, J	DATE	3/4/10
REVIEWER	KRETZSCHMAR, S/SMITHS	DATE	3/4/10

PROJECT No. 24590
 SITE MANFORD
 AREA 200E
 BUILDING No. 20

CONTRACT No. DE-AC27-01RV14136
**P&ID - LAW
 PRIMARY OFFGAS
 PROCESS SYSTEM
 MELTER 2
 LOP-VSL-00002**

SCALE: NONE
 24590-LAW-M6-LOP-00002002 REV 1



- NOTES:**
- SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
 - CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
 - THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL Q AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
 - ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
 - RADAR GUIDE TUBE TO BE ROUTED TO TRANSMITTER LOCATED ON THE FLOOR ABOVE.
 - INSTRUMENT PERFORMS AN AIR PERMIT FUNCTION. INDICATION DISPLAYED AT FCJ.
 - LOP-WESP-00002 WASH SEQUENCE HAND SWITCH.
 - VALVE/ACTUATOR ASSEMBLY SUPPLIED WITH ADJUSTABLE STOP TO PREVENT FULL CLOSURE.
 - THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-LAW-M6-LOP-00002 REV. 5. CLOUDS DEPICT MAJOR CHANGES MADE FROM SUPERSEDED DRAWING. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAW-M6N-20-00001, 24590-LAW-M6N-LOP-00008, -00033, -00037, -00040, -00051, -00053, -00060, 24590-LAW-M6PFL-LOP-00004, -00009, 24590-LAW-M6PFL-LOP-00005, -00013, AND -00015. PCV-2093 SET PRESSURE HAS BEEN REVISED FROM 60 PSIG TO 40 PSIG.
 - REVISION 1: INCORPORATED 24590-LAW-M6LN-LOP-00005, 24590-LAW-M6N-LOP-00013, -00063, -00066, -00069, -00070, -00071, -00075, 24590-LAW-M6N-M80T-00016, REVISED OFF SHEET CONNECTOR, ADDED ROOT VALVE AND BRANCH NUMBERS, CHANGED VALVE POSITION FROM "NO" TO "NO/LO", NOZZLE N31, AND CONNECTING PIPE SIZE FROM 2" TO 1". THIS P&ID HAS BEEN REVIEWED BY EBNS FOR ALL LIMITED AND PHYSICALIZATION CHANGE DOCUMENTS THAT WERE PREVIOUSLY ISSUED (SEE CCN 251622).
 - THE WESP INTERNAL SUBCOMPONENTS, INCLUDING THE ELECTRODES, INSULATORS, COLLECTOR TUBE BUNDLE, AND ELECTRODE POWER SUPPLY, LVE-PSUP-20202, ARE CONFIRMED AS CM WITH QUALITY LEVEL DETERMINATION, QDF'S (24590-LAW-QDF-MS-15-0001, 24590-LAW-QDF-MS-14-0002, AND -00003).
 - RESTRICTION ORIFICE (RO) EXISTS TO PROVIDE FLEXIBILITY FOR FUTURE DESIGN. NO PRESSURE DROP ACROSS THE RO IS REQUIRED IN CURRENT DESIGN. THE RO DOES NOT PROVIDE FLOW RESTRICTION (i.e. B-V) AND NO SIZING BASIS IS THEREFORE REQUIRED.
 - REVISION 2: INCORPORATED 24590-WTP-EIE-J-16-0001 (REV. 0), 24590-LAW-EIE-NS-17-0001 (REV. 0), 24590-WTP-M6N-50-00073, 24590-LAW-M6N-M80T-00033, 24590-LAW-M6N-LOP-00099, -00102, -00104, AND -00106. REVISED REFERENCE 1, LOP-V-07750 BALL VALVE TO GLOBE VALVE, ADR REVISION NUMBER ON THE TITLE BLOCK, OFF SHEET CONNECTOR, ADDED NOTES 11 AND 12, LINE NUMBERS, CONTROL SYSTEMS PER PSDA UPDATE. ADDED TDSH-2092 AND FSH-2050.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

- 24590-LAW-3ZD-LOP-00001, LAW PRIMARY OFFGAS (LOP) AND SECONDARY OFFGAS (LVP) SYSTEM DESIGN DESCRIPTION.

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
2	REVISED PER NOTE 13	MAS	MKA	AK	WES	7/11/19
1	REVISED PER NOTE 10	MC	RT	BA/BJ	SK/W	10/13/14
0	ISSUED FOR CONSTRUCTION SEE NOTE 9	MRO	SI	SK/SS	RS/SJ	03/4/10

ISSUED BY		DATE	
BY	DATE	BY	DATE
ORIGINATOR	2/26/10	ORIGINATOR	2/26/10
CHECKER	2/26/10	CHECKER	2/26/10
APPROVER	3/4/10	APPROVER	3/4/10
REVIEWER	3/4/10	REVIEWER	3/4/10

REVISION HISTORY

RIVER PROTECTION PROJECT
WASTE TREATMENT PLANT
2435 STEVENS CENTER PLACE
RICHLAND, WA 99354

**P&ID - LAW
LAW PRIMARY OFFGAS
PROCESS SYSTEM
MELTER 2
LOP-WESP-00002**

SCALE: NONE
24590-LAW-M6-LOP-00002004

NOTES:

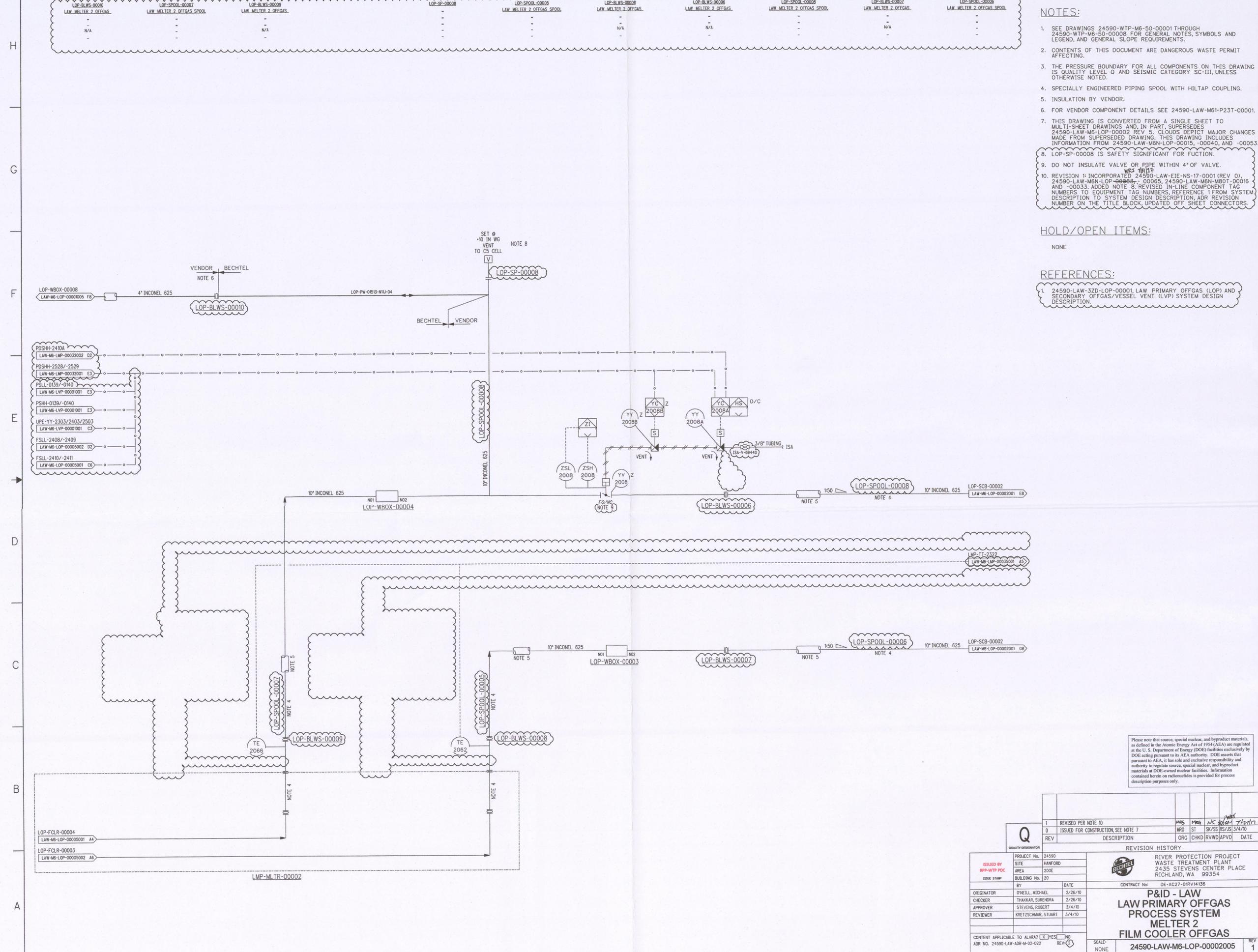
- SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
- CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
- THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL Q AND SEISMIC CATEGORY SC-III, UNLESS OTHERWISE NOTED.
- SPECIALLY ENGINEERED PIPING SPOOL WITH HILTAP COUPLING.
- INSULATION BY VENDOR.
- FOR VENDOR COMPONENT DETAILS SEE 24590-LAW-M61-P23T-00001.
- THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-LAW-M6-LOP-00002 REV 5. CLOUDS DEPICT MAJOR CHANGES MADE FROM SUPERSEDED DRAWING. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAW-M6N-LOP-00015, -00040, AND -00053.
- LOP-SP-00008 IS SAFETY SIGNIFICANT FOR FUCTION.
- DO NOT INSULATE VALVE OR PIPE WITHIN 4" OF VALVE.
- REVISION 1: INCORPORATED 24590-LAW-EIE-NS-17-0001 (REV 0), 24590-LAW-M6N-LOP-00002, 00005, 24590-LAW-M6N-MB0T-00016 AND -00033. ADDED NOTE 8. REVISED IN-LINE COMPONENT TAG NUMBERS TO EQUIPMENT TAG NUMBERS, REFERENCE 1 FROM SYSTEM DESCRIPTION TO SYSTEM DESIGN DESCRIPTION, AND REVISION NUMBER ON THE TITLE BLOCK, UPDATED OFF SHEET CONNECTORS.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

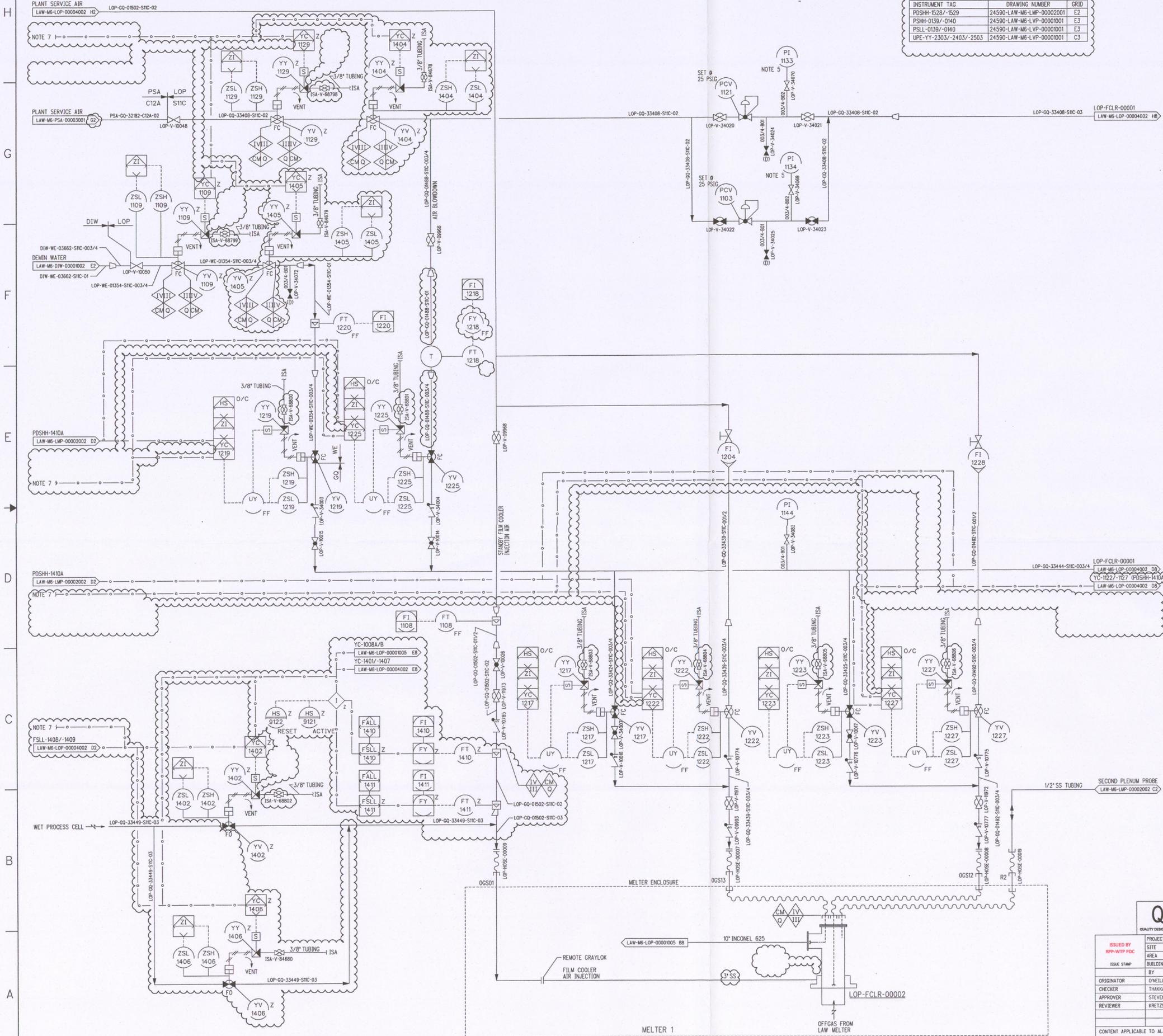
- 24590-LAW-3ZD-LOP-00001, LAW PRIMARY OFFGAS (LOP) AND SECONDARY OFFGAS/VESSEL VENT (LVP) SYSTEM DESIGN DESCRIPTION.



Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated as the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

REV	DESCRIPTION	ORG	CHKD	RYWD/APVD	DATE
1	REVISED PER NOTE 10	MWS	MWS	MC	7/27/17
0	ISSUED FOR CONSTRUCTION, SEE NOTE 7	MRO	ST	SK/SS	05/31/10

PROJECT No. 24590		RIVER PROTECTION PROJECT	
SITE HANFORD		WASTE TREATMENT PLANT	
AREA 200C		2435 STEVENS CENTER PLACE	
BUILDING No. 20		RICHLAND, WA 99354	
BY DATE		CONTRACT No. DE-AC27-01RV14136	
ORIGINATOR O'NEILL, MICHAEL	2/26/10		
CHECKER THAKKAR, SURENDRA	2/26/10		
APPROVER STEVENS, ROBERT	3/4/10		
REVIEWER KREITZSCHMAR, STUART	3/4/10		
CONTENT APPLICABLE TO ALARA? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		SCALE: NONE	
ADR NO. 24590-LAW-ADR-M-02-022		24590-LAW-M6-LOP-00002005	



LOP-FCLR-00002
MELTER 1 STANDBY
OFFGAS FILM COOLER
21W x 38" L x 57H

TABLE 1

INSTRUMENT TAG	DRAWING NUMBER	GRID
PSHH-1528/-1529	24590-LAW-M6-LMP-00002001	E2
PSHH-0139/-0140	24590-LAW-M6-LVP-00001001	E3
PSLL-0139/-0140	24590-LAW-M6-LVP-00001001	E3
LUPE-YY-2303/-2403/-2503	24590-LAW-M6-LVP-00001001	C3

- NOTES:**
- SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
 - CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
 - THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED.
 - ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
 - PI TO BE VISIBLE FROM ASSOCIATED PRESSURE REGULATOR.
 - THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-LAW-M6-LOP-00004 REV 5. CLOUDS DEPICT MAJOR CHANGES MADE FROM SUPERSEDED DRAWING. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAW-M6N-LOP-00009, -00015, -00023, -00032, -00036, -00039, -00041, -00042, -00054, -00056, -00058, 24590-LAW-M6N-MB01-00001, AND 24590-LAW-M6N-LOP-00016.
 - INTERLOCKS LISTED IN TABLE 1.
 - REVISION 1: INCORPORATED 24590-LAW-EJE-NS-17-0001 (REV 0), 24590-WTP-EJE-MS-16-0021 (REV 0), 24590-LAW-M6N-LOP-00011, 24590-LAW-M6N-LOP-00066, AND 24590-LAW-M6N-MB01-00016. ADDED TABLE 1, NOTE 7, CONTROL SYSTEMS AND UPDATED DATA LINK ROUTES PER PSDA UPDATE. REVISED ADR REVISION NUMBER ON THE TITLE BLOCK AND REFERENCE 1 REMOVED AND UPDATED OFF SHEET CONNECTORS. QUALITY/SEISMIC FLAGS FROM YV-1402, YV-1109, YV-1129 AND FROM LOP-FCLR-00002 PER PSDA UPDATES. ADDED YV-1406 AS A REDUNDANT SOURCE OF WET PROCESS CELL AIR INBLEED. ADDED FILM COOLER COOLING AIR FLOW INDICATION AND ALARM. INCREASES FILM COOLER INJECTION AIR LINE SIZE.

- HOLD/OPEN ITEMS:**
- NONE
- REFERENCES:**
- 24590-LAW-3ZD-LOP-00001, LAW PRIMARY OFFGAS (LOP) AND SECONDARY OFFGAS/VESSEL VENT (LVP) SYSTEM DESIGN DESCRIPTION.

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U.S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radioisotopes is provided for process description purposes only.

DWG NO	TITLE
24590-LAW-M6-LOP-00004001	PRIM OFFGAS PROC SYS MELTER 1 LOP-FCLR-00002
24590-LAW-M6-LOP-00004002	PRIM OFFGAS PROC SYS MELTER 1 LOP-FCLR-00001

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
1	REVISED PER NOTE 8	WHS	UK	MR	WFS	7/27/17
0	ISSUED FOR CONSTRUCTION, SEE NOTE 6	MRO	ST	SK/SS	RS/JS	3/4/10

ISSUED BY	PROJECT No.	DATE	CONTRACT No.
RFP-WTP PDC	24590	2/26/10	DE-AC27-D1RV1436
ISSUE STAMP	SITE		
	HANFORD		
	AREA		
	200		
	BUILDING No.		
	200		
ORIGINATOR	BY	DATE	
THAKKAR, SURENDRA	ONELL, MICHAEL	2/26/10	
APPROVER	DATE		
STEVENS, ROBERT	3/24/10		
REVIEWER	DATE		
KRETZSCHMAR, STUART	3/4/10		

CONTENT APPLICABLE TO ALARAP YES NO
 ADR NO. 24590-LAW-ADR-W-02-022 YES NO
 SCALE: NONE
 COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED
 24590-LAW-M6-LOP-00004001
 R11850391
 7/27/2017 10:23:08 AM
 PLOTTED BY: ekumogae

H

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C

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A

H

G

F

E

D

C

B

A

MELTER 1

LOP-FCLR-00001
MELTER 1 PRIMARY
OFFGAS FILM COOLER
23'W x 39'L x 4'11"H

NOTES:

- SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
- CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
- THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED.
- ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
- MELTER PRESSURE CONTROL AIR LOOP IS BASED ON INPUT FROM LMP-PDI-1410A AS SHOWN ON P&ID 24590-LAW-M6-LMP-00002001.
- THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-LAW-M6-LOP-00004 REV 5. CLOUDS DEPICT MAJOR CHANGES MADE FROM SUPERSEDED DRAWING. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAW-M6N-LOP-00009, -00015, -00023, -00032, -00036, -00039, -00041, -00054, -00056, -00058, 24590-LAW-M6N-MB0T-00001, AND 24590-LAW-M6PN-00009.
- INTERLOCKS LISTED IN TABLE 1.
- REVISION 1: INCORPORATED 24590-LAW-EIE-NS-17-001 (REV D), 24590-LAW-M6N-MB0T-00016, 24590-LAW-M6N-LOP-00063, AND -00098. ADDED CONTROL SYSTEMS PER PSDA UPDATE, REVISED REFERENCE 1, NOTE 5 AND ADR REVISION NUMBER ON THE TITLE BLOCK. REMOVED QUALITY/SEISMIC FLAGS FROM YV-1401 AND FROM LOP-FCLR-00001 PER PSDA UPDATE. ADDED YV-1407 AS A REDUNDANT SOURCE OF WET PROCESS CELL AIR INBLEED. ADDED FILM COOLER COOLING AIR FLOW INDICATION AND ALARM. ADDED TABLE 1 AND NOTE 7, REVISED OFF SHEET CONNECTOR.

HOLD/OPEN ITEMS:

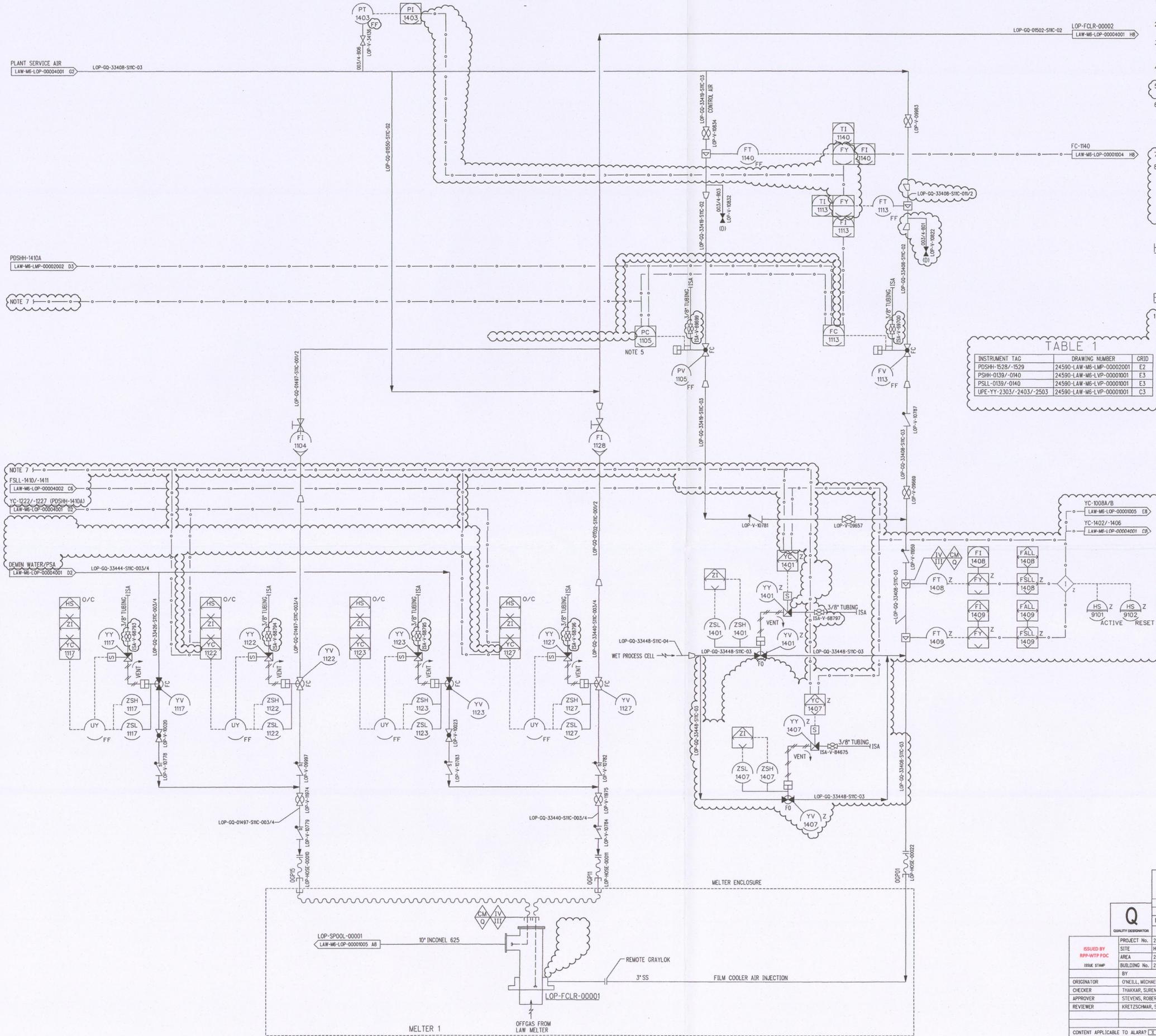
NONE

REFERENCES:

- 24590-LAW-3ZD-LOP-00001, LAW PRIMARY OFFGAS (LOP) AND SECONDARY OFFGAS/VESSEL VENT (LVP) SYSTEMS DESIGN DESCRIPTION.

TABLE 1

INSTRUMENT TAG	DRAWING NUMBER	GRID
PSHH-1528/-1529	24590-LAW-M6-LMP-00002001	E2
PSHH-0139/-0140	24590-LAW-M6-LVP-00001001	E3
PSLL-0139/-0140	24590-LAW-M6-LVP-00001001	E3
LUPE-YY-2403/-2403	24590-LAW-M6-LVP-00001001	C3



Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
1	REVISED PER NOTE 8	WRS	AK	AK	AK	7/21/17
0	ISSUED FOR CONSTRUCTION, SEE NOTE 6	MRO	ST	SK/SS	RS/ZS	3/4/10

ISSUED BY	DATE
ISSUED BY: RPP-WTP-PDC	DATE: 2/26/10
ISSUE STAMP	DATE: 2/26/10
ORIGINATOR	DATE: 3/4/10
CHECKER	DATE: 3/4/10
APPROVER	DATE: 3/4/10
REVIEWER	DATE: 3/4/10

PROJECT No. 24590
SITE HANFORD
AREA 200E
BUILDING No. 20

CONTRACT No. DE-AC27-03RV14138

**P&ID - LAW
LAW PRIMARY OFFGAS
PROCESS SYSTEM
MELTER 1
LOP-FCLR-00001**

24590-LAW-M6-LOP-00004002

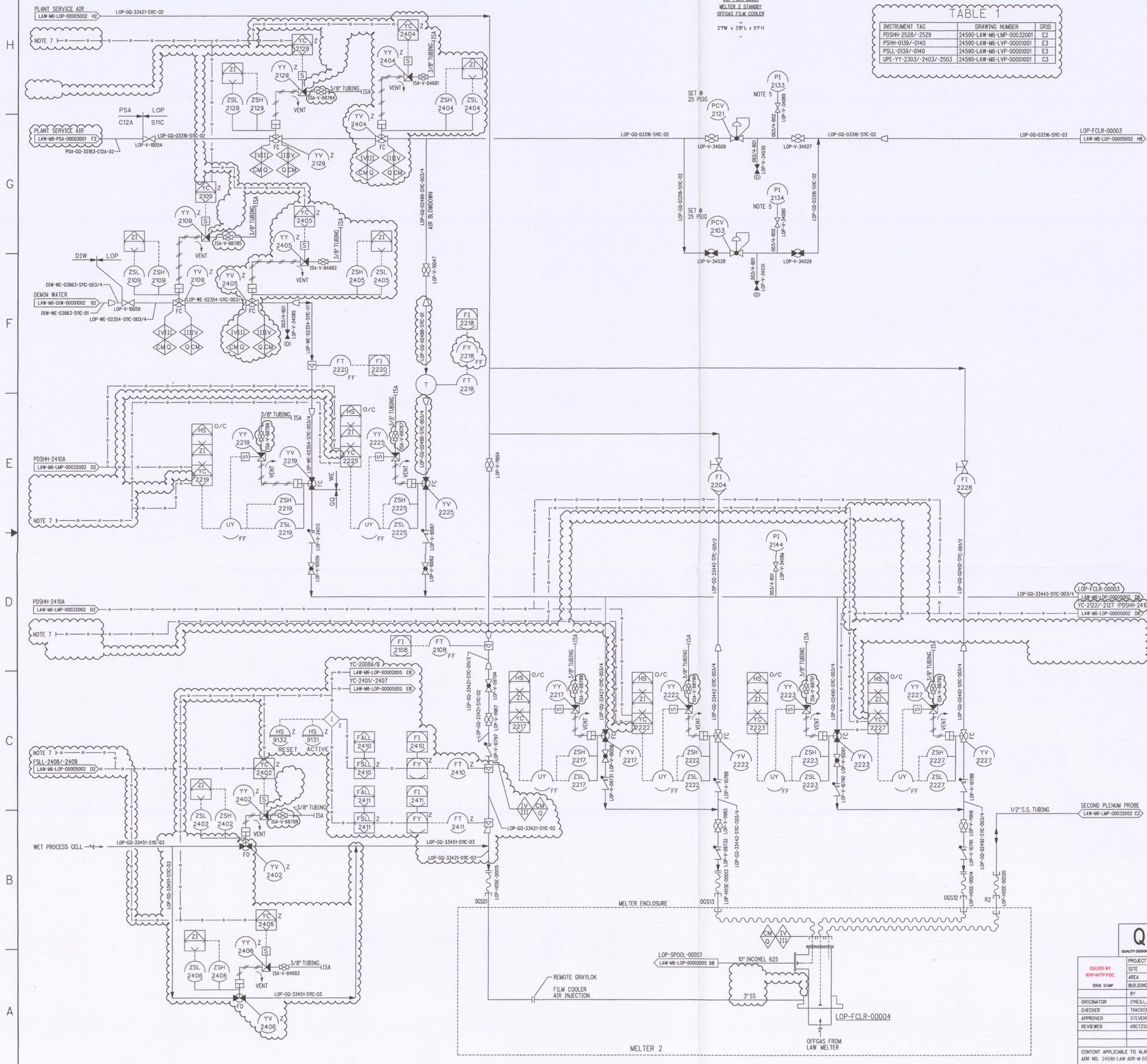


TABLE 1

INSTRUMENT TAG	DRAWING NUMBER	GRID
PSHM-2528/-2529	24590-LAW-M6-LMP-00032001	E2
PSHM-0139/-0140	24590-LAW-M6-LVP-00001001	E3
PSLL-0139/-0140	24590-LAW-M6-LVP-00001001	E3
LUPE-YY-2303/-2403/-2503	24590-LAW-M6-LVP-00001001	C3

- NOTES:**
- SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
 - CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
 - THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED.
 - ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
 - PI TO BE VISIBLE FROM ASSOCIATED PRESSURE REGULATOR.
 - THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-LAW-M6-LOP-00005 REV 5. CLOUDS DEPICT MAJOR CHANGES MADE FROM SUPERSEDED DRAWING. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAW-M6N-LOP-00010, -00015, -00024, -00032, -00036, -00039, -00041, -00042, -00055, -00056, -00058, 24590-LAW-M6N-M6OT-00001, AND 24590-LAW-M6PN-LOP-00016.
 - INTERLOCK LISTED IN TABLE 1.
 - REVISION 1: INCORPORATED 24590-LAW-EIE-NS-17-0001 (REV 0), 24590-WTP-EIE-MS-16-0021 (REV 0), 24590-LAW-M6N-LOP-00011, 24590-LAW-M6N-LOP-00066, AND 24590-LAW-M6N-M6OT-00016. ADDED CONTROL SYSTEMS PER PSDA UPDATE. REVISED ADR REVISION NUMBER ON THE TITLE BLOCK, OFF SHEET CONNECTORS, AND REFERENCE 1. REMOVED QUALITY/SEISMIC FLAGS FROM YV-2402, YV-2109, YV-2129, AND FROM LOP-FCLR-00004 PER PSDA UPDATE. ADDED YV-2406 AS A REDUNDANT SOURCE OF WET PROCESS CELL AIR INBLEED. ADDED REDUNDANT PSA AND DIW ISOLATION VALVES. ADDED TABLE 1, NOTE 7, FILM COOLER COOLING AIR FLOW INDICATION AND ALARM. INCREASES FILM COOLER INJECTION AIR LINE SIZE.

- HOLD/OPEN ITEMS:**
- NONE
- REFERENCES:**
- 24590-LAW-320-LOP-00001, LAW PRIMARY OFFGAS (LOP) AND SECONDARY OFFGAS/VESSEL VENT (LVP) SYSTEM DESIGN DESCRIPTION.

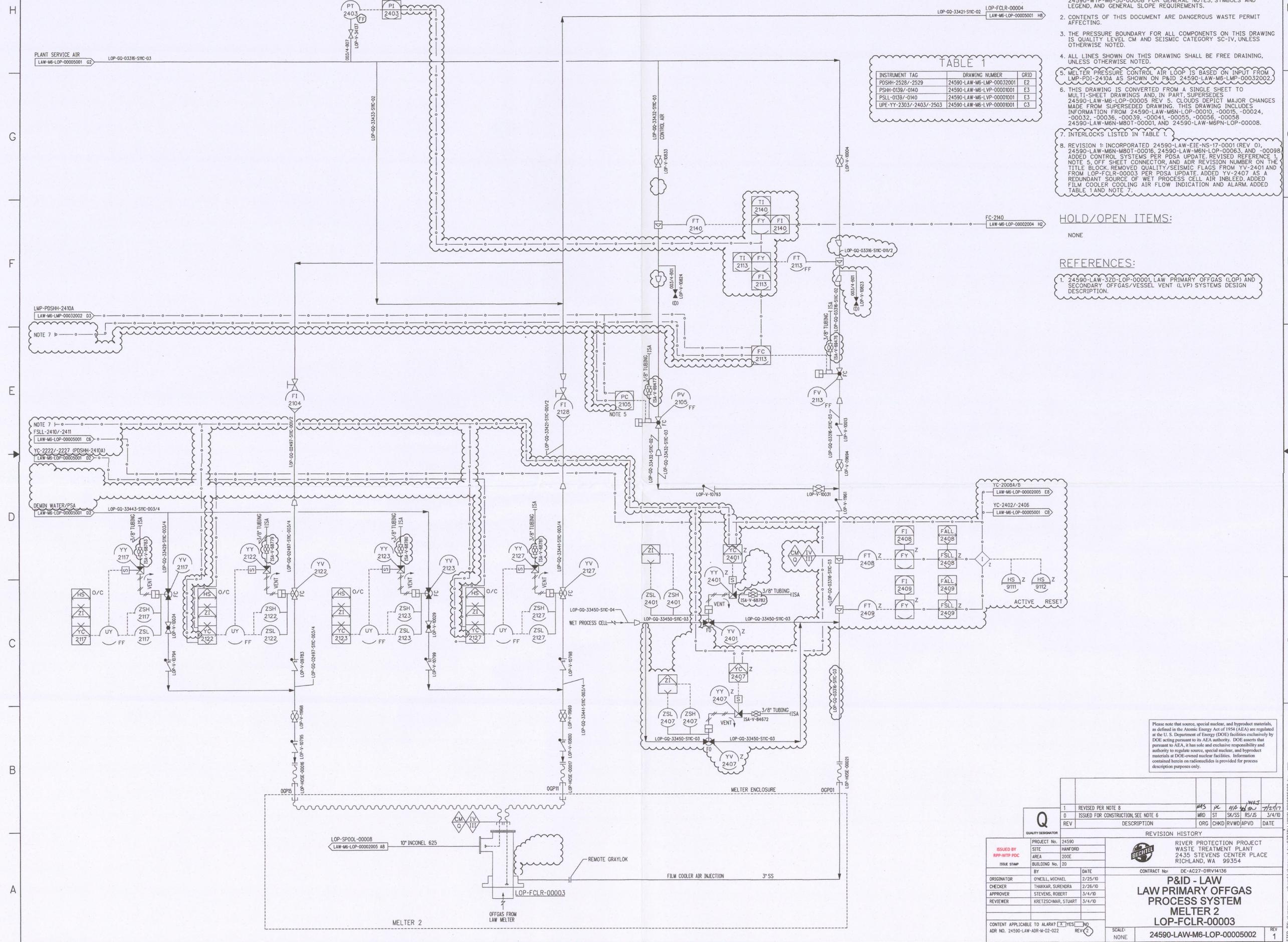
Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated by the U.S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

DWG NO	TITLE
24590-LAW-M6-LOP-00005001	PRIM OFFGAS PROC SYS MELTER 2 LOP-FCLR-00004
24590-LAW-M6-LOP-00005002	PRIM OFFGAS PROC SYS MELTER 2 LOP-FCLR-00003

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
1	REVISED PER NOTE 8	NAS	ML	ML	ML	7/27/10
0	ISSUED FOR CONSTRUCTION SEE NOTE 6	MRO	ST	SK/SS	RS/S	03/04/10

ISSUED BY RPP-WTP PDC	PROJECT No. 24590
ISSUE STAMP	SITE HANFORD
ORIGINATOR O'NEILL, MICHAEL	DATE 2/25/10
CHECKER THACKERY, BRUCE	DATE 3/26/10
APPROVER STEVENS, ROBERT	DATE 03/04/10
REVIEWER KRETSCHMAR, STUART	DATE 3/4/10

CONTRACT No. DE-AC27-09R14136	PROJECT RIVER PROTECTION PROJECT WASTE TREATMENT PLANT 2435 STEVENS CENTER PLACE RICHLAND, WA 99354
SCALE NONE	PROJECT P&ID - LAW LAW PRIMARY OFFGAS PROCESS SYSTEM MELTER 2 LOP-FCLR-00004
CONTENT APPLICABLE TO ALARM? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	24590-LAW-M6-LOP-00005001
ADR No. 24590-LAW-ADR-M-02-022	REV 2



LOP-FCLR-00003
MELTER 2 PRIMARY
OFFGAS FILM COOLER
23W x 38'L x 4'TH

NOTES:

- SEE DRAWINGS 24590-WTP-M6-50-00001 THROUGH 24590-WTP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
- CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
- THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED.
- ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
- MELTER PRESSURE CONTROL AIR LOOP IS BASED ON INPUT FROM LMP-PDI-2410A AS SHOWN ON P&ID 24590-LAW-M6-LMP-00032001, NOTE 6, OFF SHEET CONNECTOR, AND ADR REVISION NUMBER ON THE TITLE BLOCK. REMOVED QUALITY/SEISMIC FLAGS FROM YV-2401 AND FROM LOP-FCLR-00003 PER PSA UPDATE. ADDED YV-2407 AS A REDUNDANT SOURCE OF WET PROCESS CELL AIR INLEAD. ADDED FILM COOLER COOLING AIR FLOW INDICATION AND ALARM. ADDED TABLE 1 AND NOTE 7.
- INTERLOCKS LISTED IN TABLE 1.
- REVISION 1: INCORPORATED 24590-LAW-EIE-NS-17-0001 (REV. 0), 24590-LAW-M6N-M80T-00016, 24590-LAW-M6N-LOP-00063, AND -00098. ADDED CONTROL SYSTEMS PER PSA UPDATE. REVISED REFERENCE 1, NOTE 6, OFF SHEET CONNECTOR, AND ADR REVISION NUMBER ON THE TITLE BLOCK. REMOVED QUALITY/SEISMIC FLAGS FROM YV-2401 AND FROM LOP-FCLR-00003 PER PSA UPDATE. ADDED YV-2407 AS A REDUNDANT SOURCE OF WET PROCESS CELL AIR INLEAD. ADDED FILM COOLER COOLING AIR FLOW INDICATION AND ALARM. ADDED TABLE 1 AND NOTE 7.

TABLE 1

INSTRUMENT TAG	DRAWING NUMBER	GRID
PSHH-2528/-2529	24590-LAW-M6-LMP-00032001	E2
PSHH-0139/-0140	24590-LAW-M6-LVP-00000001	E3
PSLL-0139/-0140	24590-LAW-M6-LVP-00000001	E3
LPEE-YY-2303/-2403/-2503	24590-LAW-M6-LVP-00000001	C3

HOLD/OPEN ITEMS:

NONE

REFERENCES:

- 24590-LAW-3ZD-LOP-00001, LAW PRIMARY OFFGAS (LOP) AND SECONDARY OFFGAS/VESSEL VENT (LVP) SYSTEMS DESIGN DESCRIPTION.

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radioisotopes is provided for process description purposes only.

REV	DESCRIPTION	ORG	CHKD	REV'D	APVD	DATE
1	REVISED PER NOTE 8	MMS	JK	NA	MS	7/27/17
0	ISSUED FOR CONSTRUCTION. SEE NOTE 6	MRO	ST	SK/SS	RS/LS	3/4/10

ISSUED BY: RPP-WTP POC
ISSUE STAMP:

ORIGINATOR: O'NEILL, MICHAEL
CHECKER: THAKKAR, SURENDR
APPROVER: STEVENS, ROBERT
REVIEWER: KRETZSCHMAR, STUART

DATE: 2/25/10
2/26/10
3/4/10

CONTENT APPLICABLE TO ALARAT YES NO
ADR NO. 24590-LAW-ADR-M-02-022

REVISION HISTORY

PROJECT No. 24590
SITE HANFORD
AREA 200E
BUILDING No. 20

CONTRACT No. DE-AC27-08R14136

**P&ID - LAW
LAW PRIMARY OFFGAS
PROCESS SYSTEM
MELTER 2
LOP-FCLR-00003**

SCALE: NONE
24590-LAW-M6-LOP-00005002

7/27/2017 10:33:33 AM
R11800384

Table III.10.E.B – LAW Vitrification Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
LFP-VSL-00004 (Melter 2 Feed Vessel)		-M6-LFP-00003003, Rev 0 -M6-LFP-00003004, Rev 0 -M6-LFP-00003005, Rev 0 -M6-LFP-00003006, Rev 0 -MV-LFP-P0001, Rev 0 -MV-LFP-P0002, Rev 0 -MV-LFP-P0004, Rev 0 -MV-LFP-P0005, Rev 0 -MVD-LFP-P0007, Rev 1 -MVD-LFP-P0008, Rev 1 -MVD-LFP-P0010, Rev 1 -MVD-LFP-P0011, Rev 1 -P1-P01T-00002, Rev 7 -N1D-LFP-00004, Rev 2 -N1D-LFP-00006, Rev 0		
<u>LAW Secondary Off-gas/Vessel Vent Process System</u> LVP-TK-00001 (LAW Caustic Collection Tank)	LVP	<u>24590-LAW</u> -M5-V17T-00011, Rev 6 -P1-P01T-00004, Rev 6 -VDCN-M-13-00001 -MTD-LVP-00001, Rev 1 -N1D-LVP-00002, Rev 2	Section 4E.4.2.2; Tables 4E-1 and 4E-3; and Figures 4A-1 and 4A-3 of Operating Unit Group 10, Chapter 4 of this Permit.	LVP-TK-00001 = 14,232
<u>LAW Primary Off-gas Process System</u>	LOP	<u>24590-LAW</u> -M5-V17T-P0007, Rev 0 -M5-V17T-P0008, Rev 0	Section 4E.4.2.1; Tables 4E-1 and 4E-3; and Figures 4A-1 and 4A-3 of Operating Unit Group 10, Chapter 4 of this Permit.	LOP-VSL-00001 = 9,056 LOP-VSL-00002 = 9,056

Table III.10.E.B – LAW Vitrification Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
<p>LOP-VSL-00001 (LAW Melter 1 SBS Condensate Vessel)</p> <p>LOP-VSL-00002 (LAW Melter 2 SBS Condensate Vessel)</p>		<p>-M6-LOP-00001002, Rev 1</p> <p>-M6-LOP-00002002, Rev 1</p> <p>-M6-LOP-00001001, Rev 0</p> <p>-M6-LOP-000010022, Rev 0</p> <p>-MV-LOP-P0001, Rev 0</p> <p>-MV-LOP-P0002, Rev 0</p> <p>-MVD-LOP-00004, Rev 6</p> <p>-MVD-LOP-00005, Rev 6</p> <p>-N1D-LOP-P0002, Rev 1</p> <p>-P1-P01T-00002, Rev 7</p>		
<p><u>LAW Vitrification Plant Radioactive Liquid Waste Disposal System</u></p> <p>RLD-VSL-00003 (Plant Wash Vessel)</p> <p>RLD-VSL-00004 (C3/C5 Drains/Sump Collection Vessel)</p> <p>RLD-VSL-00005 (SBS Condensate Collection Vessel)</p>	RLD	<p><u>24590-LAW</u></p> <p>-M5-V17T-00014, Rev 6</p> <p>-M6-RLD-00001001, Rev 0</p> <p>-M6-RLD-00001002, Rev 0</p> <p>-M6-RLD-00001003, Rev 0</p> <p>-M6-RLD-00001004, Rev 0</p> <p>-M6-RLD-00001005, Rev 0</p> <p>-M6-RLD-00001006, Rev 0</p> <p>-M6-RLD-00002001, Rev 0</p> <p>-M6-RLD-00002002, Rev 0</p> <p>-M6-RLD-00002003, Rev 0</p> <p>-M6-RLD-00002004, Rev 0</p> <p>-M6-RLD-00002005, Rev 0</p>	<p>Section 4E.2.3; Tables 4E-1 and 4E-3; and Figures 4A-1 and 4A-3 of Operating Unit Group 10, Chapter 4 of this Permit.</p>	<p>RLD-VSL-00003 = 25,780</p> <p>RLD-VSL-00004 = 7696</p> <p>RLD-VSL-00005 = 25,780</p>

Table III.10.H.A - LAW Plant Miscellaneous Unit System Description

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables and Figures
<p><u>LAW Melter Process System</u> LMP-MLTR-00001 (LAW Melter 1) LMP-MLTR-00002 (LAW Melter 2)</p>	LMP	<p><u>24590-LAW</u> -CM-HC4-HXYG-00240-02-00014, Rev/ - -M0D-LMP-00001, Rev. 3 -M0D-LMP-00002, Rev. 3 -M6-LMP-00001001, Rev 0 -M6-LMP-00002001, Rev 0 -M6-LMP-00002002, Rev 0 -M6-LMP-00031001, Rev 0 -M6-LMP-00032001, Rev 0 -M6-LMP-00032002, Rev 0 -MF-LMP-00001, Rev. 0 -MF-LMP-00002, Rev. 0 -MF-LMP-00003, Rev. 0 -MF-LMP-00004, Rev. 0 -3PS-AE00-T0001, Rev. 6 -3PN-LMP-00002 -N1D-LMP-00001, Rev. 1 -P1-P01T-00002, Rev 7</p>	Section 4E.2.2, Table 4E-2, and Figures 4A-1, 4A-3 and 4A-21 in Operating Unit Group 10, Chapter 4 of this Permit.
<p><u>LAW Primary Offgas Process System</u> LOP-FCLR-00001 (Melter 1 Primary Film Cooler) LOP-FCLR-00002 (Melter 1 Standby Film Cooler No. 2) LOP-FCLR-00003 (Melter 2 Primary Film Cooler)</p>	LOP	<p><u>24590-LAW</u> -P1-P01T-00002, Rev 7 -M6-LOP-00004001, Rev 01 -M6-LOP-00004002, Rev 01 -M6-LOP-00005001, Rev 01 -M6-LOP-00005002, Rev 01</p>	Section 4E.4.2.1, Table 4E-2, and Figures 4A-1, 4A-3 and 4A-21 in Operating Unit Group 10, Chapter 4 of this Permit.

Table III.10.H.A - LAW Plant Miscellaneous Unit System Description

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables and Figures
LOP-FCLR-00004 (Melter 2 Standby Film Cooler)			
<p><u>LAW Primary Offgas Process System (Cont.)</u> LOP-SCB-00001 (Melter 1 Submerged Bed Scrubber) LOP-SCB-00002 (Melter 2 Submerged Bed Scrubber)</p>	LOP	<p><u>24590-LAW</u> -M5-V17T-P0007, Rev 0 -M5-V17T-P0008, Rev 0 -M6-LOP-00001001, Rev 01 -M6-LOP-00002001, Rev 01 -MK-LOP-P0001001, Rev 0 -MK-LOP-P0001002, Rev 0 -MK-LOP-P0001003, Rev 0 -MKD-LOP-P0008, Rev 0 -NID-LOP-P0001, Rev 1 -P1-P01T-00002, Rev 7</p>	Section 4E.4.2.1, Table 4E-2, and Figures 4A-1 and 4A-3 in Operating Unit Group 10, Chapter 4 of this Permit.
<p><u>LAW Primary Offgas Process System (Cont.)</u> LOP-WESP-00001 (Melter 1 Wet Electrostatic Precipitator - WESP) LOP-WESP-00002 (Melter 2 Wet Electrostatic Precipitator -WESP)</p>	LOP	<p><u>24590-LAW</u> -M5-V17T-P0007, Rev 0 -M5-V17T-P0008, Rev 0 -M6-LOP-00001004, Rev 02 -M6-LOP-00002004, Rev 02 -NID-LOP-00003, Rev 3 -P1-P01T-00002, Rev 7</p> <p><u>24590-WTP</u> -3PS-MKE0-T0001, Rev 5</p>	Section 4E.4.2.1, Table 4E-2, and Figures 4A-1 and 4A-3 in Operating Unit Group 10, Chapter 4 of this Permit.
<u>LAW Secondary Offgas/Vessel Vent Process System</u>	LVP	<p><u>24590-LAW</u> -M5-V17T-00010, Rev 4</p>	Section 4E.4.2.2, Table 4E-2, Figures 4A-1 and 4A-3 in Operating Unit Group 10, Chapter 4 of this Permit.