Job No. 24590

Bechtel National, Inc.

SUPPLIER DOCUMENT STATUS

1. [X] **Work may proceed.**
2. [ ] **Revise and resubmit. Work may proceed subject to resolution of indicated comments.**
3. [ ] **Revise and resubmit. Work may not proceed.**
4. [ ] **Review not required. Work may proceed.**

Permission to proceed does not constitute acceptance or approval of design details, calculations, analyses, test methods, or materials developed or selected by the supplier and does not relieve supplier from full compliance with contractual obligations.

REVIEWED										SSNS
										JM

G-321 Document Category N/A
[From Supplement A to G-321-E (E) or G-321-V (V), as applicable, or "N/A" if SSRS is used]

Supersedes BNI Document No. N/A Rev. _____
[When applicable]

Accepted by DC Pfingsten (Print Name) _____ (Signature) 8/5/04 (Date)

Released by N/A (Print Name) _____ (Signature) _____ (Date)
[When applicable]

416 GP&S 7-03

24590-CM-HC4-HXYG-00138-02-00041

REV. 00A

SUBCONTRACT SUBMITTAL

Best Available Copy

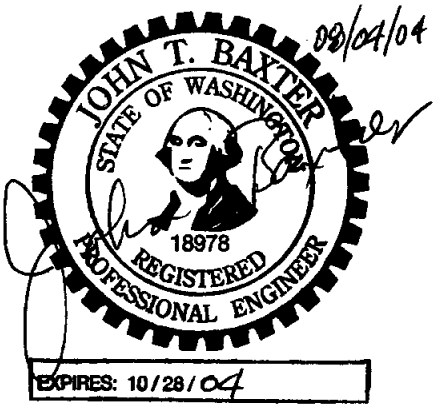
IQRPE REVIEW –
PRETREATMENT FACILITY (PTF) ELEVATION 0'-0" ION EXCHANGE SPENT RESIN COLLECTION AND DEWATERING PROCESS (RDP) VESSEL RDP-VSL-00004 ANCILLARY EQUIPMENT

"I, John T. Baxter, have reviewed, and certified a portion of the design of a new tank system or component located at the Hanford Waste Treatment Plant, owned/operated by Department of Energy, Office of River Protection, Richland, Washington. My duties were independent review of the current design for the Pretreatment Facility (PTF) Elevation 0'-0" Ion Exchange Spent Resin Collection And Dewatering Process (RDP) Vessel RDP-VSL-00004 Ancillary Equipment as required by the Dangerous Waste Regulations, namely, WAC 173-303-640(3) applicable paragraphs, i.e., (a) through (g)."

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

The documentation reviewed indicates that the design intent fully satisfies the requirements of the WAC.

The attached review is twelve (12) pages numbered one (1) through twelve (12).



24590-CM-HC4-HXYG-00138-02-00041, REV. 00A

John T. Baxter
Signature

08/04/2004
Date

STRUCTURAL INTEGRITY ASSESSMENT OF THE PRETREATMENT FACILITY (PTF) ELEVATION 0'-0" ION EXCHANGE SPENT RESIN COLLECTION AND DEWATERING PROCESS (RDP) VESSEL RDP-VSL-00004 ANCILLARY EQUIPMENT

COGEMA-IA-066
REV. 0

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 the 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.

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Scope	Scope of this Integrity Assessment	This integrity assessment includes ancillary equipment associated with the PTF Ion Exchange Spent Resin Collection and Dewatering Process vessel RDP-VSL-00004 as shown on P&ID drawing 24590-PTF-M6-RDP-P0002, Rev. 2.
References	Drawings and System Description	24590-PTF-3YD-RDP-00001, Rev. 0, System Description for Spent Resin Collection and Dewatering Process - System RDP; 24590-PTF-3YN-RDP-00001, System Description Change Notice (SCDN) for System Description Number 24590-PTF-3YD-RDP-00001, Rev. 0; 24590-PTF-3YN-RDP-00002, SCDN for System Description Number 24590-PTF-3YD-RDP-00001, Rev. 0; 24590-PTF-M5-V17T-P0020, Rev. 1, Process Flow Diagram Spent Resin Collection and Dewatering Process System RDP; 24590-PTF-M6-RDP-P0002, Rev. 2, P&ID – PTF Ion Exchange Spent Resin Collection and Dewatering; 24590-PTF-P1-P01T-P0001, Rev. 3, Pretreatment Facility General Arrangement Plan at EL. 0'-0"
References	Plant Item Material Selection Data Sheet, Engineering Specification and Material Requisition	24590-PTF-N1D-RPD-P0002, Rev. 0, Plant Item Material Selection Data Sheet, RDP-VSL-00004 (PTF) Spent Resin Dewatering Moisture Separation Vessel; 24590-PTF-MVD-RDP-00008, Rev. 0, Mechanical Systems Data Sheet: Vessel, Spent Resin Dewatering Moisture Separation Vessel RDP-VSL-00004; 24590-PTF-3PS-MWD0-T0003, Rev. 0 Engineering Specification for RDP Spent Resin Dewatering Equipment Package; Material Requisition No: 24590-CM-MRA-MWD0-00005, Rev. 1, Spent Resin Dewatering System, MR Section 2 – Technical Specifications (Rev. 2, November 26, 2002) and Supplements –S01 and –S0002

Summary of Assessment

For each item of "Information Assessed" (i.e., Criteria) on the following pages, the items listed under "Source of Information" were reviewed and found to furnish adequate design controls and requirements to assure the design intent fully satisfies the WAC requirements.

	Information Assessed	Source of Information	Discussion
Design	Ancillary equipment design standards are appropriate and adequate for the equipment's intended use.	Drawings, Mechanical Systems Data Sheet, and System Description listed above under References; 24590-WTP-DC-PS-01-001, Rev 3, Pipe Stress Design Criteria including "Pipe Stress Criteria" and "Span Method Criteria"; ASME B31.3 Code, Process Piping, 1996 Edition, American Society of Mechanical Engineers; 24590-WTP-VV-PS-01-001, Rev. 2, Verification and Validation Report for ME101, Linear Elastic Analysis of Piping, Version N8	The Pipe Stress Design Criteria identifies ASME B31.3 as the design code for ancillary equipment systems of the WTP. Ancillary equipment is designed using manual calculations or approved computer programs that have been verified and validated as discussed in the reference Verification and Validation Test Plan document. The P&ID drawing identifies the ancillary equipment in this system as Quality Level Commercial Grade (CM) and Seismic Category (SC-III). These codes and standards are acceptable and adequate for the design of the ancillary equipment for the intended service.
	If the ancillary equipment to be used is not built to a design standard, the design calculations demonstrate sound engineering principles of construction.	24590-WTP-DC-PS-01-001, Rev 3, Pipe Stress Design Criteria including "Pipe Stress Criteria" and "Span Method Criteria"	The ancillary equipment is built to a design standard. The Pipe Stress Design Criteria specifies that ancillary equipment is to be designed in accordance with ASME B31.3.
	Ancillary equipment has adequate strength at the end of its design life to withstand the operating pressure, operating temperature, thermal expansion, and seismic loads. Equipment is protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction.	Drawings listed above under References; 24590-WTP-DC-PS-01-001, Rev 3, Pipe Stress Design Criteria including "Pipe Stress Criteria" and "Span Method Criteria"; Uniform Building Code (UBC), 1997 Edition, International Conference of Building Officials; 24590-WTP-DB-ENG-01-001, Rev 1B, Basis of Design	The Pipe Stress Design Criteria requires the use of the ASME B31.3 Code for ancillary equipment design. ASME B31.3 requires explicit consideration of operating pressure, operating temperature, thermal expansion/contraction, settlement, vibration, and corrosion allowance in the design of piping. The Uniform Building Code is used to provide appropriate seismic design requirements for Seismic Category (SC-III) ancillary equipment as discussed in the Pipe Stress Design Criteria. The Basis of Design document specifies that passive mechanical equipment is to be designed for a nominal plant life of 40 years. These requirements and codes and standards are adequate to assure that the ancillary equipment will have adequate strength at end of life to resist all anticipated conditions.

	Information Assessed	Source of Information	Discussion
Supports	Ancillary equipment supports are adequately designed.	Mechanical Systems Data Sheet listed above under References; 24590-WTP-DC-PS-01-002, Rev 3, Pipe Support Design Criteria; ASME Boiler and Pressure Vessel Code, Section III, Rules for Construction of Nuclear Facility Components, Division 1, Subsection NC, Appendix N and Appendix F, 1995; 24590-WTP-PER-PS-02-001, Rev. 4, Ancillary Equipment Pipe Support Design; Uniform Building Code (UBC), 1997 Edition, International Conference of Building Officials; 24590-WTP-PL-PS-01-001, Rev 1, Verification and Validation Test Plan for Bechtel's ME150 Pipe Support Family of Programs (PCFAPPS)	The Pipe Support Design Criteria document considers all loadings identified in ASME B31.3 and utilizes ASME Section III (Subsection NC and Appendix N and F) to supplement the requirements of ASME B31.3 for seismic design of SC-III/IV pipe supports. Bounding load cases are passed to the pipe support designers from the results of the ancillary equipment piping stress analyses. Details of the seismic design methodology are discussed in the Pipe Support Design Criteria document. The Ancillary Equipment Pipe Support Design document provides summaries of applicable design requirements for various typical supports illustrated in the document. Analysis of supports is by manual calculation or approved computer programs that have been verified and validated as discussed in the reference Verification and Validation Test Plan document. These are appropriate codes and standards for design of ancillary equipment supports over the range of conditions identified for these systems. Design standards for vessel internal equipment supports are discussed in the integrity assessment for each system vessel.
Connections	Seams and connections are adequately designed.	24590-WTP-DC-PS-01-001, Rev 3, Pipe Stress Design Criteria including "Pipe Stress Criteria" and "Span Method Criteria"; ASME Boiler and Pressure Vessel Code, Section IX, Welding and Brazing Qualifications; ASME/ANSI B16.5, 1988 Edition, Piping Flanges and Flanged Fittings; 24590-WTP-3PS-PF00-T0001, Rev. 1, Engineering Specification for Process Jumper Fabrication for PT and HLW	The Pipe Stress Design Criteria specifies the ASME B31.3 Process Piping design code for the piping systems. Welding is to be performed in accordance with the requirements of ASME B31.3 and the ASME B&PV Code, Section IX. Flanges are to be designed in accordance with ASME B16.5 where flanged connections are allowed for ancillary equipment. The Engineering Specification for Process Jumper Fabrication for PT and HLW provides requirements for fabrication of remote handled process jumpers. These are adequate and appropriate codes and standards for design and fabrication of the ancillary equipment seams and connections.

	Information Assessed	Source of Information	Discussion
Frost Heave	The system will withstand the effects of frost heave.	System Description listed above under References; 24590-WTP-DC-ST-01-001, Rev. 2, Structural Design Criteria	The RDP-VSL-00004 ancillary equipment considered in this assessment is located in process cells P-0119 and P-0121A at elevation 0'-0" in the PTF. as discussed in the System Description. The Structural Design Criteria requires that all structural foundations shall extend into the surrounding soil below the frost line to preclude frost heave. The frost line is 30 in. below grade. The PTF building foundations are not subject to frost heave; therefore, the ancillary equipment located inside the building is not subject to the effects of frost heave.
Waste Characteristics	Characteristics of the waste to be stored or treated have been identified (ignitable, reactive, toxic, specific gravity, vapor pressure, flash point, temperature)	Plant Item Material Selection Data Sheet listed above under References; 24590-WTP-PER-PR-03-001, Rev. 1, Prevention of Hydrogen Accumulation in WTP Tank Systems and Miscellaneous Treatment Unit Systems; 24590-WTP-PER-PR-03-002, Rev. 1, Toxic Vapors and Emissions from WTP Tank Systems and Miscellaneous Treatment Unit Systems	The Prevention of Hydrogen Accumulation in WTP Tank Systems and Miscellaneous Treatment Unit Systems document indicates that flammable or explosive concentrations of hydrogen are not expected in the RDP-VSL-00004 ancillary equipment. Similarly, the Toxic Vapors and Emissions from WTP Tank Systems and Miscellaneous Treatment Unit Systems document provides a summary of the PTF ancillary equipment design features that provide for confinement and treatment of chronically toxic vapors and emissions during normal operations, abnormal operations, and during and after a design level seismic event. The Cs IX transport liquor chemistry listed in the Plant Item Material Selection Data Sheet represents the temperature range and chemistry of the fluids handled in this ancillary equipment.

	Information Assessed	Source of Information	Discussion
Waste Characteristics	Ancillary equipment is designed to handle the wastes with the characteristics defined above and any treatment reagents.	Drawings, Plant Item Material Selection Data Sheet and System Description listed above under References; 24590-WTP-PER-M-02-002, Rev 1, Materials for Ancillary Equipment; 24590-WTP-PER-PL-02-001, Rev. 5, Piping Material Class Description	The Plant Item Material Selection Data Sheet for vessel RDP-VSL-00004 lists the chemistry and temperature range for wastes handled in the vessel and specifies that 304L stainless steel is the minimum material requirement for the vessel with a corrosion allowance of 0.04 in. The Materials for Ancillary Equipment document requires that the material selection and corrosion/erosion allowances for ancillary equipment in contact with the waste will be equal to or better than the material and corrosion allowance of the waste source vessel except as noted therein. The P&ID drawing and the Piping Material Class Description document identify the ancillary equipment as 316L stainless steel. The System Description states that no reagents are handled in this ancillary equipment.
Compatibility	The pH range of the waste, waste temperature and the corrosion behavior of the structural materials are adequately addressed. Ancillary equipment material and protective coatings ensure the ancillary equipment structure is adequately protected from the corrosive effects of the waste stream and external environments. The protection is sufficient to ensure the equipment will not leak or fail for the design life of the system.	Plant Item Material Selection Data Sheet and System Description listed above under References; 24590-WTP-DB-ENG-01-001, Rev 1B, Basis of Design; 24590-WTP-PER-M-02-002, Rev 1, Materials for Ancillary Equipment	The Basis of Design identifies a service design life of 40 years for the ancillary equipment. The Plant Item Material Selection Data Sheet for vessel RDP-VSL-00004 lists the chemistry and temperature range for wastes handled in the vessel and specifies the minimum material requirement for the vessel and the corrosion allowance. The Materials for Ancillary Equipment document requires that the material selection and corrosion/erosion allowances for ancillary equipment in contact with the waste will be equal to or better than the material and corrosion allowance of the waste source vessel except as noted therein. Therefore, the ancillary equipment will provide the expected design service life.

	Information Assessed	Source of Information	Discussion
Corrosion Allowance	Corrosion allowance is adequate for the intended service life of the ancillary equipment.	Drawings listed above under References; 24590-WTP-DB-ENG-01-001, Rev 1B, Basis of Design; 24590-WTP-PER-M-02-002, Rev 1, Materials for Ancillary Equipment; 24590-WTP-PER-PL-02-001, Rev. 5, Piping Material Class Description	The Plant Item Material Selection Data Sheet for vessel RDP-VSL-00004 lists the chemistry and temperature range for wastes handled in the vessel and specifies that 304L stainless steel is the minimum material requirement for the vessel with a corrosion allowance of 0.04 in. The Materials for Ancillary Equipment document requires that downstream ancillary equipment is to be constructed of equal or better materials than the source vessel, and with the same corrosion allowance as the source vessel except as noted therein. The P&ID drawing and the Piping Material Class Description document identify the ancillary equipment piping material classes as 316L stainless steel with corrosion/erosion allowances as reported therein.
Strength	Pressure controls (vents and relief valves) are adequately designed to ensure pressure relief if normal operating pressures in the vessels are exceeded.	Drawings listed above under References; 24590-WTP-DC-PS-01-001, Rev 3, Pipe Stress Design Criteria including "Pipe Stress Criteria" and "Span Method Criteria"; 24590-WTP-PER-PL-02-001, Rev. 5, Piping Material Class Description	The Pipe Stress Design Criteria document specifies use of ASME B31.3 as the design code for the WTP piping. ASME B31.3 requires provision be made to safely contain or relieve any pressure to which the piping may be subjected. ASME B31.3 piping not protected by a pressure relieving device, or that can be isolated from a pressure reliving device must be designed for at least the highest pressure that can be developed. The Piping Material Class Description document lists bounding temperature/pressure limits for each piping material class.
	Maximum flows and any unusual operating stresses are identified	Drawings and System Descriptions listed above under References; 24590-WTP-DC-PS-01-001, Rev 3, Pipe Stress Design Criteria including "Pipe Stress Criteria" and "Span Method Criteria"; 24590-WTP-PER-PL-02-001, Rev. 5, Piping Material Class Description	The expected flow paths for the ancillary equipment are identified on the P&ID drawings. The Pipe Stress Design Criteria document specifies the ASME B31.3 code for piping design. This code requires piping to be designed to the highest pressure that can be developed in a piping system assuring that maximum operating stresses remain within code allowables. The Piping Material Class Description document lists the bounding pressure and temperature limits for each piping material class.

	Information Assessed	Source of Information	Discussion
Secondary Containment	Ancillary equipment is designed with secondary containment that is constructed of materials compatible with the waste and of sufficient strength to prevent failure (pressure gradients, waste, climatic conditions, daily operations), provided with a leak-detection system, and designed to drain and remove liquids.	Drawings listed above under References	The ancillary equipment considered in this assessment is located in accessible process cells. The Spent Resin Dewatering Moisture Separation equipment is housed in Process Cells P-0119 and P-0121A in the northeast zone of the PTF. Secondary containment for ancillary equipment within these rooms is provided by the liners, sumps and special protective coatings as shown on the elevation 0'-0" general arrangement drawing and is outside the scope of this integrity assessment.

	Information Assessed	Source of Information	Discussion
Design	Ancillary equipment design standards are appropriate and adequate for the equipment's intended use.	24590-PTF-M6-RDP-00002, Rev. 0, P&ID – PTF Ion Exchange Spent Resin Collection and Dewatering; 24590-PTF-3PS-MWD0-T0003, Rev. 0 Engineering Specification for RDP Spent Resin Dewatering Equipment Package; ASME B31.3 Code, Process Piping, 1996 Edition, American Society of Mechanical Engineers; Material Requisition No: 24590-CM-MRA-MWD0-00005, Rev. 1, Spent Resin Dewatering System, MR Section 2 – Technical Specifications (Rev. 2, November 26, 2002) and Supplements –S01 and –S0002	The Engineering Specification for RDP Spent Resin Dewatering Equipment Package identifies ASME B31.3 as the design code for ancillary equipment in this vendor package. Additional supplementary design and fabrication requirements are also specified in both the Engineering Specification and the Material Requisition. The P&ID drawing identifies the ancillary equipment in this system as Quality Level Commercial Grade (CM) and Seismic Category (SC-III). These codes and standards are acceptable and adequate for the design of the ancillary equipment for the intended service.
	If the ancillary equipment to be used is not built to a design standard, the design calculations demonstrate sound engineering principles of construction.	24590-PTF-3PS-MWD0-T0003, Rev. 0 Engineering Specification for RDP Spent Resin Dewatering Equipment Package; ASME B31.3 Code, Process Piping, 1996 Edition, American Society of Mechanical Engineers	The ancillary equipment is built to a design standard. The Engineering Specification for RDP Spent Resin Dewatering Equipment Package specifies that ancillary equipment is to be designed in accordance with ASME B31.3.
	Ancillary equipment has adequate strength at the end of its design life to withstand the operating pressure, operating temperature, thermal expansion, and seismic loads. Equipment is protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction.	24590-PTF-M6-RDP-00002, Rev. 0, P&ID – PTF Ion Exchange Spent Resin Collection and Dewatering; 24590-PTF-3PS-MWD0-T0003, Rev. 0 Engineering Specification for RDP Spent Resin Dewatering Equipment Package; ASME B31.3 Code, Process Piping, 1996 Edition, American Society of Mechanical Engineers; 24590-WTP-3PS-FB01-T0001, Rev. 1, Engineering Specification for Structural Design Loads for Seismic Category III & IV Equipment and Tanks; Uniform Building Code (UBC), 1997 Edition, International Conference of Building Officials; 24590-WTP-DB-ENG-01-001, Rev 1B, Basis of Design	The Engineering Specification for RDP Spent Resin Dewatering Equipment Package identifies ASME B31.3 as the design code for ancillary equipment in this vendor package. It also specifies a design life of 40 years for passive ancillary equipment components. ASME B31.3 requires explicit consideration of operating pressure, operating temperature, thermal expansion/contraction, settlement, vibration, and corrosion allowance in the design of piping. The Uniform Building Code is used to provide appropriate seismic design requirements for Seismic Category (SC-III) ancillary equipment as specified in the Engineering Specification for Structural Design Loads for Seismic Category III & IV Equipment and Tanks. These requirements and codes and standards are adequate to assure that the ancillary equipment will have adequate strength at end of life to resist all anticipated loading conditions.

	Information Assessed	Source of Information	Discussion
Supports	Ancillary equipment supports are adequately designed.	24590-PTF-3PS-MWD0-T0003, Rev. 0 Engineering Specification for RDP Spent Resin Dewatering Equipment Package; ASME B31.3 Code, Process Piping, 1996 Edition, American Society of Mechanical Engineers; AISC, Allowable Stress Design (ASD), 1989, American Institute of Steel Construction Uniform Building Code (UBC), 1997 Edition, International Conference of Building Officials	The Engineering Specification for RDP Spent Resin Dewatering Equipment Package identifies ASME B31.3 as the design code for ancillary equipment in this vendor package. It also specifies that the equipment comprising the RDP Spent Resin Dewatering Equipment Package will be mounted on a common structural skid. The equipment supports on the skid and the skid itself are to be designed for all loadings specified in ASME B31.3 and for SC-III seismic design level loads. The structural design is to be in accordance with the AISC ASD methods and the UBC. Analysis of supports is by manual calculation or approved computer programs. These are appropriate codes and standards for design of ancillary equipment supports over the range of conditions identified for these systems. Design standards for vessel internal equipment supports are discussed in the integrity assessment for each system vessel.
Connections	Seams and connections are adequately designed.	24590-PTF-3PS-MWD0-T0003, Rev. 0 Engineering Specification for RDP Spent Resin Dewatering Equipment Package; ASME B31.3 Code, Process Piping, 1996 Edition, American Society of Mechanical Engineers; ASME Boiler and Pressure Vessel Code, Section IX, Welding and Brazing Qualifications; ASME/ANSI B16.5, 1988 Edition, Piping Flanges and Flanged Fittings	The Engineering Specification for RDP Spent Resin Dewatering Equipment Package identifies ASME B31.3 as the design code for ancillary equipment in this vendor package. Welding is to be performed in accordance with the requirements of ASME B31.3 and the ASME B&PV Code, Section IX. Flanges are to be designed in accordance with ASME B16.5 where flanged connections are allowed for ancillary equipment. These are adequate and appropriate codes and standards for design and fabrication of the ancillary equipment seams and connections.
Frost Heave	The system will withstand the effects of frost heave.	System Description listed above under References; 24590-WTP-DC-ST-01-001, Rev. 2, Structural Design Criteria	The RDP-VSL-00004 ancillary equipment considered in this assessment is located in process cells P-0119 and P-0121A at elevation 0'-0" in the PTF, as discussed in the System Description. The Structural Design Criteria requires that all structural foundations shall extend into the surrounding soil below the frost line to preclude frost heave. The frost line is 30 in. below grade. The PTF building foundations are not subject to frost heave; therefore, the ancillary equipment located inside the building is not subject to the effects of frost heave.

	Information Assessed	Source of Information	Discussion
Waste Characteristics	Characteristics of the waste to be stored or treated have been identified (ignitable, reactive, toxic, specific gravity, vapor pressure, flash point, temperature)	Plant Item Material Selection Data Sheet listed above under References; 24590-WTP-PER-PR-03-001, Rev. 1, Prevention of Hydrogen Accumulation in WTP Tank Systems and Miscellaneous Treatment Unit Systems; 24590-WTP-PER-PR-03-002, Rev. 1, Toxic Vapors and Emissions from WTP Tank Systems and Miscellaneous Treatment Unit Systems	The Prevention of Hydrogen Accumulation in WTP Tank Systems and Miscellaneous Treatment Unit Systems document indicates that flammable or explosive concentrations of hydrogen are not expected in the RDP-VSL-00004 ancillary equipment. Similarly, the Toxic Vapors and Emissions from WTP Tank Systems and Miscellaneous Treatment Unit Systems document provides a summary of the PTF ancillary equipment design features that provide for confinement and treatment of chronically toxic vapors and emissions during normal operations, abnormal operations, and during and after a design level seismic event. The Cs IX transport liquor chemistry listed in the Plant Item Material Selection Data Sheet represents the temperature range and chemistry of the fluids handled in this ancillary equipment.
	Ancillary equipment is designed to handle the wastes with the characteristics defined above and any treatment reagents.	24590-PTF-3PS-MWD0-T0003, Rev. 0 Engineering Specification for RDP Spent Resin Dewatering Equipment Package; 24590-PTF-M6-RDP-00002, Rev. 0, P&ID – PTF Ion Exchange Spent Resin Collection and Dewatering; 24590-WTP-3PS-P000-T0001, Rev. 2, Engineering Specification for Piping Material Classes	The Engineering Specification for RDP Spent Resin Dewatering Equipment Package provides the operating temperatures, chemistry, and residual activity for the spent ion exchange resin and transport liquor for use by the vendor in design for material selection. This specification indicates that the only waste handled in this system is spent resin and transport liquor. The P&ID drawing and the Engineering Specification for Piping Material Classes identify the ancillary equipment materials as 316L stainless steel.

	Information Assessed	Source of Information	Discussion
Compatibility	The pH range of the waste, waste temperature and the corrosion behavior of the structural materials are adequately addressed. Ancillary equipment material and protective coatings ensure the ancillary equipment structure is adequately protected from the corrosive effects of the waste stream and external environments. The protection is sufficient to ensure the equipment will not leak or fail for the design life of the system.	24590-PTF-3PS-MWD0-T0003, Rev. 0 Engineering Specification for RDP Spent Resin Dewatering Equipment Package; 24590-PTF-M6-RDP-00002, Rev. 0, P&ID – PTF Ion Exchange Spent Resin Collection and Dewatering; 24590-WTP-3PS-P000-T0001, Rev. 2, Engineering Specification for Piping Material Classes;	The Engineering Specification for RDP Spent Resin Dewatering Equipment Package provides the operating temperatures, chemistry, and residual activity for the spent ion exchange resin and transport liquor for use by the vendor in design for material selection. This specification requires that the Equipment Package be designed for a 40 year service life. This specification indicates that the only waste handled in this system is spent resin and transport liquor. It also requires the ancillary equipment to be designed in accordance with the P&ID drawing and the Engineering Specification for Piping Material Classes. The drawing and specification identify the the ancillary equipment as 316L stainless steel. Therefore, the ancillary equipment will provide the expected design service life.
Corrosion Allowance	Corrosion allowance is adequate for the intended service life of the ancillary equipment.	24590-PTF-3PS-MWD0-T0003, Rev. 0 Engineering Specification for RDP Spent Resin Dewatering Equipment Package; 24590-PTF-M6-RDP-00002, Rev. 0, P&ID – PTF Ion Exchange Spent Resin Collection and Dewatering; 24590-WTP-3PS-P000-T0001, Rev. 2, Engineering Specification for Piping Material Classes;	The Engineering Specification for RDP Spent Resin Dewatering Equipment Package requires the vendor to design the ancillary equipment using the information on the P&ID drawing and in the Engineering Specification for Piping Material Classes. The P&ID drawing identifies the ancillary equipment piping classes as S11B and S12A. These lines are 316L stainless steel with corrosion/erosion allowances as reported in the Engineering Specification for Piping Material Classes. The corrosion allowance is adequate for the intended service life.

	Information Assessed	Source of Information	Discussion
Strength	Pressure controls (vents and relief valves) are adequately designed to ensure pressure relief if normal operating pressures in the vessels are exceeded.	24590-PTF-3PS-MWD0-T0003, Rev. 0 Engineering Specification for RDP Spent Resin Dewatering Equipment Package; 24590-PTF-M6-RDP-00002, Rev. 0, P&ID – PTF Ion Exchange Spent Resin Collection and Dewatering; 24590-WTP-3PS-P000-T0001, Rev. 2, Engineering Specification for Piping Material Classes	The Engineering Specification for RDP Spent Resin Dewatering Equipment Package identifies ASME B31.3 as the design code for ancillary equipment in this vendor package. ASME B31.3 requires provision be made to safely contain or relieve any pressure to which the piping may be subjected. ASME B31.3 piping not protected by a pressure relieving device, or that can be isolated from a pressure reliving device must be designed for at least the highest pressure that can be developed. The Engineering Specification for Piping Material Classes lists bounding temperature/pressure limits for each piping material class.
	Maximum flows and any unusual operating stresses are identified	24590-PTF-M6-RDP-00002, Rev. 0, P&ID – PTF Ion Exchange Spent Resin Collection and Dewatering; 24590-PTF-3PS-MWD0-T0003, Rev. 0 Engineering Specification for RDP Spent Resin Dewatering Equipment Package; 24590-WTP-3PS-P000-T0001, Rev. 2, Engineering Specification for Piping Material Classes	The expected flow paths for the ancillary equipment are identified on the P&ID drawing. The Engineering Specification for RDP Spent Resin Dewatering Equipment Package identifies ASME B31.3 as the design code for ancillary equipment in this vendor package. This code requires piping to be designed to the highest pressure that can be developed in a piping system assuring that maximum operating stresses remain within code allowables. The Engineering Specification for Piping Material Classes lists the bounding pressure and temperature limits for each piping material class.
Secondary Containment	Ancillary equipment is designed with secondary containment that is constructed of materials compatible with the waste and of sufficient strength to prevent failure (pressure gradients, waste, climatic conditions, daily operations), provided with a leak-detection system, and designed to drain and remove liquids.	24590-PTF-3PS-MWD0-T0003, Rev. 0 Engineering Specification for RDP Spent Resin Dewatering Equipment Package; 24590-PTF-P1-P01T-P0001, Rev. 3, Pretreatment Facility General Arrangement Plan at EL. 0'-0"	The ancillary equipment considered in this assessment is located in accessible process cells. The Spent Resin Dewatering Moisture Separation equipment is housed in Process Cells P-0119 and P-0121A in the northeast zone of the PTF as discussed in the Engineering Specification for RDP Spent Resin Dewatering Equipment Package. Secondary containment for ancillary equipment within these rooms is provided by the liners, sumps and special protective coatings, as shown on the PTF elevation 0'-0" general arrangement drawing, and is outside the scope of this integrity assessment.