
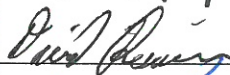
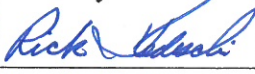
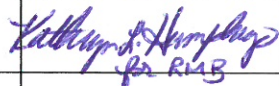





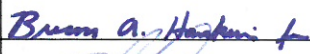
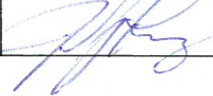
### Interface Signature Page

Interface organizations, as appropriate, sign this sheet indicating concurrence and approval with the ICD contents. These signatures signify that the ICD accurately reflects the current baselines of interface organization's contracts, except as indicated in Appendix A, ICD 24590-WTP-ICD-MG-01-011 Issues and Open Items. The BNI Area Project Manager does not approve this ICD until all required signatures on this page have been obtained.

#### Contractor Concurrence

Organization	Position	Name	Signature	Date
WTP Contractor	ICD 11 Lead	Lou Gonzales		04/17/19
WTP Contractor	ICD 11 Interface Owner	Dave Reinemann		4-17-19
TOC	ICD 11 Interface Owner	Rick Tedeschi		4-17-19
MSC	ICD 11 Interface Owner	Rick Boarder	 for RLAB	4/17/19
PRC	ICD 11 Interface Owner	N/A		

#### DOE Approval

Position	Name	Signature	Date
ORP Assistant Manager for Waste Treatment Plant	Tom Fletcher		4/26/19
ORP Assistant Manager for Tank Farms	Rob Hastings		4/29/19
RL Assistant Manager for Mission Support	Jeff Frey		4/30/19

## History Sheet

Rev	Date	Reason for revision	Revised by
0	14 March 2002	Provided for ORP Contracting Officer to issue as Operative ICD. Upon issuance this document will supersede BNFL-5193-ID-11, Rev 6.	N Barangan
1	15 Nov 2002	Provided for ORP Contracting Officer to issue as Operative ICD as part of the required ICD update. Incorporated ICF 24590-WTP-ICF-E-02-001, Rev 0.	R Ciolli
2	15 Nov 2003	Provided for ORP Contracting Officer to issue as Operative ICD as part of the required ICD update. Incorporated ICF 24590-WTP-ICF-ENG-02-003.	R Ciolli
3	06 Jun 2008	Periodic update. Transitioned tracking of all Issues and Action Items to the Action Tracking System (ATS) as follows: Issue A11-15 → 24590-WTP-ATS-QAIS-07-1037, Initiate power service for operations	C Chan
4	13 Jul 2009	ORP Letter to N. F. Grover dated Aug 1, 2008, <i>Contract No. DE-AC27-01RV14136 - Direction to Make Changes and Re-Issue Interface Control Documents (ICD) 5, 6, 9, 11, 12, and 19</i> (CCN 183784)  Incorporate maximum electrical load information from current Load Flow Analysis.	C Chan
5	16 Apr 2012	Periodic update. Incorporated current information regarding projected WTP power supply and demand.  ICF 24590-BOF-ICF-ENG-03-002 has been addressed by this revision, and the provisions of the ICF have been superseded by the new ICD revision.	N Schertz
6	01/09/2014	Periodic update. Incorporated information regarding IEEE 765 compliance. Added sections for interface protocols and for startup and commissioning interface implementation.	J Wilkins
7	09/17/2015	Periodic update. Reformatted document in accordance with updated Interface Control Procedure (24590-WTP-GPP-MGT-003, Rev 10). No revision bars are used to indicate changes. However, changes are described in the Revision Description. Closed ICD Issues A11-17, A11-18, and A11-19. Closed Open Items #0002 and #0003.	J Singh
8	05/07/2019	Updated to reflect energization of Building 87 and revised WTP and MSC interfaces associated with the energization process. Revised per scope document CCN 306002. Added Sections 3, 4 and 5 based on revised ICD template. This is a major revision; change bars are not shown.  Incorporated ICFs 24590-WTP-ICF-MGT-17-0001, 24590-WTP-ICF-MGT-18-0008, and 24590-WTP-ICF-MGT-18-0009. Information from ICF 24590-WTP-ICF-MGT-17-0001 has been updated to be consistent with the current requirements format and presentation of WTP contacts.	L Gonzales

## Revision Description

ICD Section	Description
All	The ICD has been reformatted in accordance with the requirements of procedure for <i>Interface Control Documents</i> (24590-WTP-GPP-RAOS-OS-0001, Rev 3). The ICD scope has been modified to align with the DFLAW operating configuration.
1.1	Renamed section to “Interface Scope” and added new content.
1.2	Inserted new section, “System Overview”, and added new content.
Figures 1 & 2	Updated and moved Figures 1 and 2 into Section 1.2. Both diagrams have been updated to show the change in the WTP and MSC interfaces for electricity provided to WTP.
1.3	Renamed Rev 7 Section 1.2 to “Interface Functions” and revised content to consider aspects that need to be in place for a complete interface.
1.4	Added new section, “Special Interface Roles,” to address roles that are specific to ICD 11 for both MSC (Section 1.4.1) and WTP (Section 1.4.2).
Table 1	Renamed table to “Functions of the Electricity Interface” and simplified content to reflect interface functions.
2	Renamed section to “Interface Background Information” and inserted introductory paragraph.
2.1	Renamed subsection to “Physical Information”. Deleted statements that are covered as requirements in Section 3. Added discussion referencing the transfer of Building 87 cabling and duct banks to MSC and the associated change of interface boundaries between WTP and MSC.
2.2	Renamed subsection to “Administrative Information” and revised subsection discussions to address Safety (Section 2.2.1), Regulatory (Section 2.2.2), Post-Commissioning/Maintenance (Section 2.2.3), and Schedule (Section 2.2.4). Configuration management is covered in Section 3.
2.2.1	Renamed subsection to “Safety Information”. Moved appropriate paragraphs into this section including Integrated Safety Management System discussion from Section 2.2.7. Interface schedule is addressed in Section 2.2.4.
2.2.2	Renamed subsection to “Regulatory Information”. Moved IEEE Standards discussion into this section. Any requirements listed in this section in Rev 7 were moved to Section 3.
2.2.3	Renamed subsection to “Post-Commissioning/Maintenance”. Any requirements listed in this section in Rev 7 were moved to Section 3. Added statements on operating procedures from Section 2.2.6, and statements on reliability, availability, maintainability, and inspectability (RAMI) from Section 2.2.9.
2.2.4	Added statement to reference the DFLAW Integrated Program Schedule. Revision 7 milestones from Section 2.2.1 were deleted as project schedules have changed significantly.
2.2.5	Deleted. Discussion for transfer of Building 87 cabling and duct banks, and interface boundaries between WTP and MSC is covered in Section 2.1.
2.2.6	Deleted. Operating protocols addressed in Section 2.2.3.
2.2.7	Deleted. Integrated Safety Management System covered in Section 2.2.1.
2.2.8	Deleted. Content moved to Section 2.2.1.
2.2.9	Deleted. RAMI covered in Section 2.2.3.
2.2.10	Deleted. Startup and Commissioning Interface Implementation covered in Section 3.
2.3	Renamed subsection to “Acceptance Criteria”. Specific requirements are covered in Section 3.
2.4	Deleted. Configuration management is covered in Section 3. Deleted Rev 7 Table 2.
2.5	Deleted. IEEE Standards covered in Section 2.2.2.

## Revision Description

ICD Section	Description
3	Added new section, "Requirements," and subsections to address technical, activity level flow down, and programmatic requirements for ICD 11.
3.1	Added to address Technical Requirements (Design Criteria). Content is from 24590-WTP-ICF-MGT-18-0008.
3.2	Added to address Activity Level Requirements. Content is from 24590-WTP-ICF-MGT-18-0009.
3.3	Added to address Programmatic Requirements. Content is from 24590-WTP-ICF-MGT-18-0009 with contractor contact information from 24590-WTP-ICF-MGT-17-0001.
4	Added new section, "Requisite Interface Items," and subsections to address WTP Contractor, TOC, and MSC interface items.
4.1	Added to address WTP Contractor Requisite Interface Items. Content is from 24590-WTP-ICF-MGT-18-0009.
4.2	Added to address TOC Interface Items as a placeholder.
4.3	Added to address MSC Interface Items as a placeholder.
5	Added to address "References" moved from Section 3 in Rev 7. Various references were deleted and added to support the update of this revision.
Appendix A	Re-labeled as Issues and Open Items. Changed table format to align with ICD Action Items List. Added new open item.
Appendix B	Deleted. Closed ICD issues to be identified in Appendix A.
Appendix C	Deleted. New open items to be listed in Appendix A.

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## Acronyms

AHJ	authority having jurisdiction
ANSI	American National Standards Institute
ATS	Action Tracking System
BNI	Bechtel National, Incorporated
BPA	Bonneville Power Administration
BOF	Balance of Facilities
CCN	correspondence control number
DFLAW	direct feed low-activity waste
DOE	US Department of Energy
IEEE	Institute of Electrical and Electronics Engineers
ICD	interface control document
ICF	interface change form
HLW	high-level waste
MSC	Mission Support Contractor
ORP	US Department of Energy, Office of River Protection
PPS	preferred power source
PRC	Plateau Remediation Contractor
PT	Pretreatment
RAM	Requirement Area Manager
RAMI	reliability, availability, maintainability, and inspectability
RL	US Department of Energy, Richland Operations Office
RPP	River Protection Project
TOC	Tank Operations Contractor
WRPS	Washington River Protection Solutions
WTCC	Waste Treatment Completion Company
WTP	Hanford Tank Waste Treatment and Immobilization Plant

## Units

AC	alternating current
Hz	Hertz
kV	kilovolt
MVA	megavolt-amp
MW	megawatt
VAC	volt alternating current



# 1 Interface Description

## 1.1 Interface Scope

This Interface Control Document (ICD) describes the physical and administrative interactions for managing the transfer of electrical power to the Hanford Tank Waste Treatment and Immobilization Plant (WTP). The WTP Contractor interfaces with the Tank Operations Contractor (TOC) and the Mission Support Contractor (MSC) for this transfer. TOC has contractual responsibility for providing Hanford services to WTP. MSC manages the transfer of Hanford Site electricity to the WTP Contractor's site electrical distribution system for construction and "operations" (startup, commissioning, and permanent operations).

This revision of ICD 11 focuses on the WTP direct-feed low-activity waste (DFLAW) operating configuration. Configuration requirements associated with the High-Level Waste (HLW) and Pretreatment (PT) Facilities will be addressed in a future revision of this ICD.

Providing power from the Emergency Turbine Generator and Standby Diesel Generator to support WTP facilities is the responsibility of the WTP Contractor, and it is not included as part of this ICD.

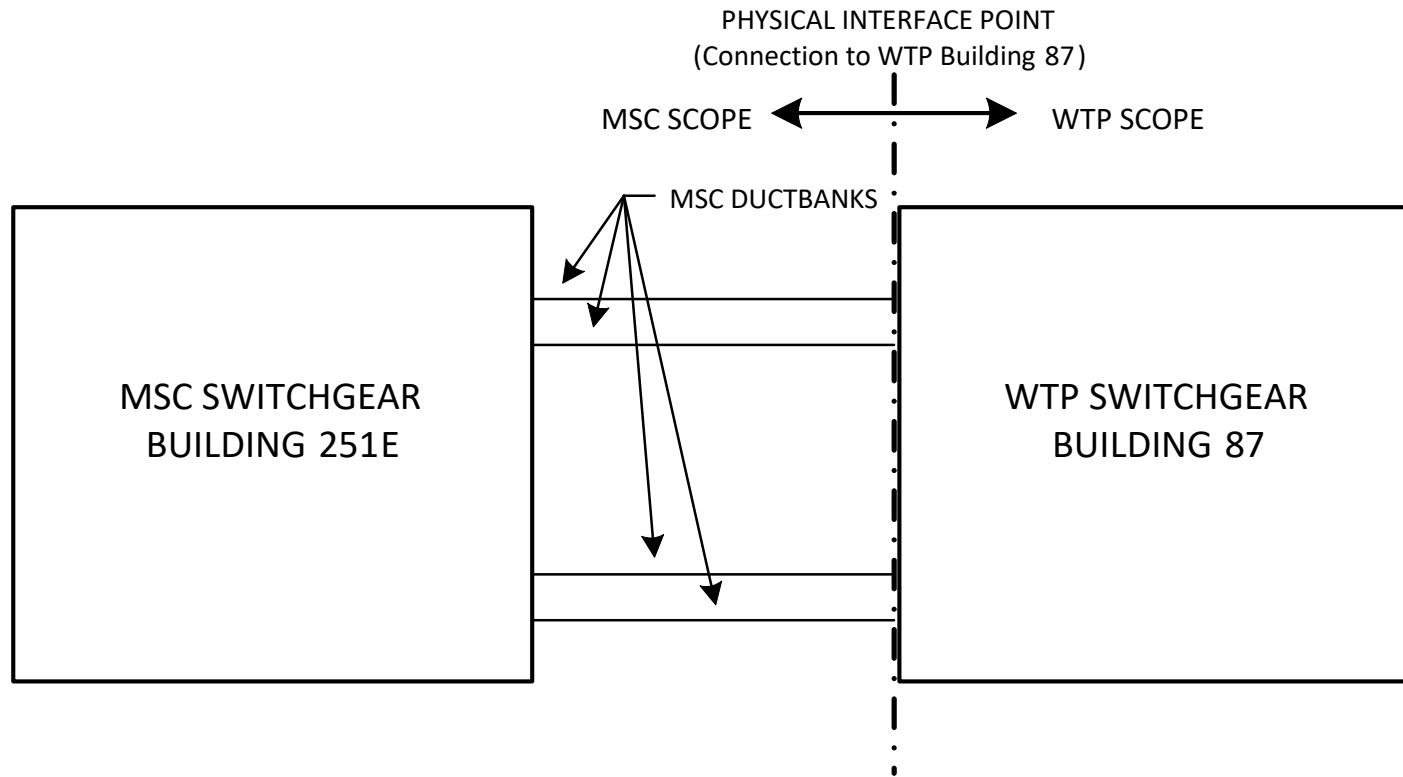
## 1.2 System Overview

The interfaces for electrical power provided to WTP during DFLAW operation are illustrated in Figure 1 and Figure 2. The electrical power supply for the WTP site originates from the 230-kV A6 substation (operated by MSC). Power to the A6 substation is supplied by two, high-voltage transmission lines that are part of the 230-kV Hanford Site Transmission System, which is designed and configured to provide a high level of service reliability and availability to the Hanford Site. The 230-kV power supply is capable of providing 62.5 MW of load to the A6 substation without impacting any other Hanford Site Transmission System loads (i.e., 100 Area, 200 Area) (RPP-6598, *Reliability, Availability and Maintainability (RAM) Analysis of the Hanford Site 230-KV Transmission System*, CH2M 2001). Power from the A6 substation is distributed to the WTP site through multiple 13.8-kV distribution lines (24590-WTP-DB-ENG-01-001, *Basis of Design*, BNI 2018a).

The 230-kV transmission lines feed power to two utility transformers within the A6 substation, which are each nominally rated at 230-13.8-kV, 37/50/62 MVA. The substation utility transformers supply power to an MSC-maintained, single switchgear lineup with two incoming breakers and a bus tiebreaker that isolates the substation transformer incoming feeds.

Electrical power from the A6 substation is transferred to the WTP switchgear, located in Building 87, which has four feeder breakers (two per utility substation transformer) that provide power to the WTP power distribution system. The total plant load in the WTP is divided into two load groups, designated as plant load group A and group B. This division reflects a general concept of providing power for the plant electrical loads from two independent, MSC furnished transformers supplied via looped transmission lines. Each utility substation transformer and associated load group switchgear feeders are sized to provide power to the entire WTP electrical load if the other utility substation transformer or load group switchgear is unavailable. This approach reflects a practical effort to make MSC-provided power supplies, WTP loads, and WTP cables and raceways affiliated with each load group less affected by single point failures (*Basis of Design*, BNI 2018a).

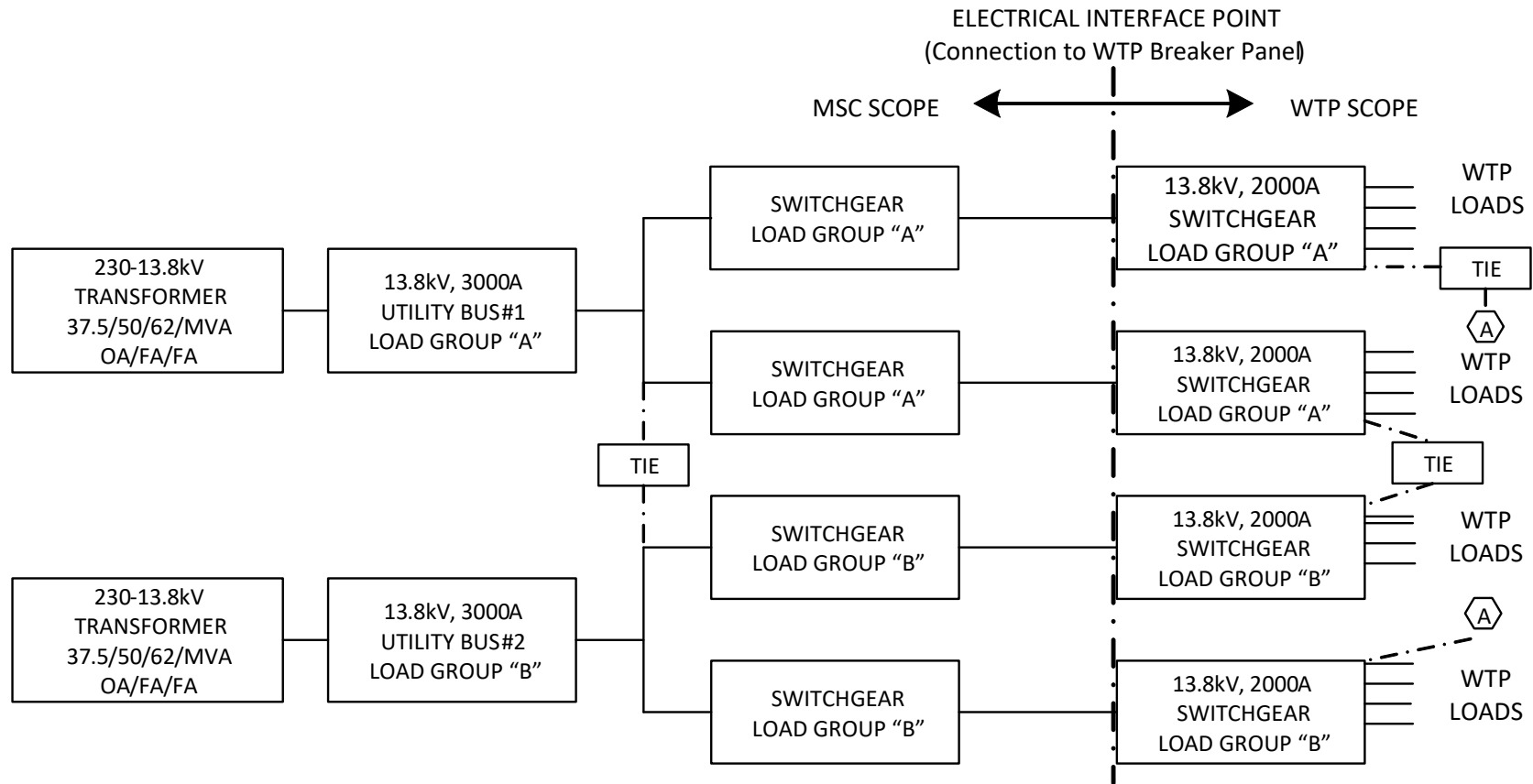
Figure 1 Physical Interface



**BLOCK DIAGRAM - POWER DISTRIBUTION: PHYSICAL INTERFACE**

\*WTP installed duct banks transferred to MSC via project property transfer process (24590-WTP-DECEX-AS-18-0217, *Government Property Disposition - ORP/RL Transfer Approval for DECEX-AS-18-0217 to Mission Support Alliance*, BNI 2018b).

Figure 2 Electrical Interface



**BLOCK DIAGRAM - POWER DISTRIBUTION: ELECTRICAL INTERFACE**

(24590-BOF-E1-MVE-00001, *BOF Facilities Power Distribution (MVE) Main Single Line Diagram*, BNI 2019a)

### 1.3 Interface Functions

Table 1 presents the general interface functions and corresponding responsibilities for each interfacing contractor. Requirements derived from these functions are listed in Section 3 for each contractor.

### 1.4 Special Interface Roles

#### 1.4.1 MSC Contractor – Electrical Utilities

MSC Electrical Utilities staff support WTP/MS electrical power interfaces through performance of various specialized interactions. MSC Electrical Utilities actions include:

- Review WTP Contractor electrical utilities changes that may impact MSC electrical equipment configurations, operating parameters, or maintenance requirements.
- Review WTP Contractor planned design changes and modifications associated with electrical utilities and WTP/MS interfaces.
- Oversight of electrical power outages and energization activities for WTP facilities that may impact the Hanford Site electrical power grid.
- Perform periodic inspections, maintenance, modifications, and upgrades of MSC equipment on the WTP site.
- Notify WTP Contractor Shift Operations Manager (509-420-3597), or designee, prior to accessing the WTP site and performing any work activities on MSC electrical equipment.
- Provide electrical equipment performance and advisory information to the WTP Contractor as requested.
- Review annual electrical power usage forecast provided by the WTP Contractor to confirm estimates are still valid to support planning for Hanford Site electrical power grid updates.

#### 1.4.2 WTP Contractor Authority Having Jurisdiction

The WTP Contractor electrical Authority Having Jurisdiction (AHJ) is responsible for ensuring the implementation of those specialized interface actions that are performed or provided to support the WTP/MS electrical power interfaces described in ICD 11. These actions include:

- Convey to and review with MSC any design and facility configuration changes associated with the MSC electrical utilities equipment and distribution lines within the WTP site.
- Provide information to MSC in support of their oversight of electrical power outages and energization activities for WTP facilities that may impact the Hanford Site electrical power grid.
- Coordinate with MSC for performance of inspections, maintenance, modifications, and updates on MSC electrical utilities equipment within the WTP boundary.
- Coordinate with MSC to ensure notifications to WTP Shift Operations Manager (509-420-3597), or designee, are made prior to performing any work activities on MSC electrical utilities within the WTP site.
- Coordinate with MSC for requests for electrical utilities equipment performance and advisory information.
- Coordinate with MSC for preparation and submittal of WTP annual electrical power usage forecast estimates to support planning for Hanford Site electrical power grid updates.

**Table 1 Functions of the Electricity Interface**

<b>Interface Function</b>	<b>WTP Responsibility</b>	<b>TOC Responsibility</b>	<b>MSC Responsibility</b>
<b>1</b> Evaluate power loads for WTP operations (startup and commissioning) and construction.	Provide information on the amount of power (average and peak loads) required for operations and construction.	Use projected power loads to plan, coordinate and budget electrical supply system upgrades and modifications.	Review power loads against system capacity.
<b>2</b> Provide coordination of electrical protective devices on both sides of the interface.	Maintain coordination of protective devices on the WTP side of the interface with electrical protective devices on the MSC side of the interface.	No Action	Maintain coordination of electrical protective devices on the MSC side of the interface with electrical protective devices on the WTP side of the interface.
<b>3</b> Provide power for WTP construction, including Pit 30 aggregate mining and the T43/T47 area.	Limit power consumption during construction such that demand does not exceed capacity at the defined interface point.	Use the WTP estimated power usage to estimate and budget construction power usage costs.	Deliver power to support the WTP construction power demand.
<b>4</b> Provide power for WTP operations.	Limit power consumption during operations within system capacity.	Use the WTP estimated power usage to estimate and budget operations power usage costs.	Deliver power to and maintain defined capacity electrical distribution at the WTP site electrical interface points.
<b>5</b> Complete service connections for WTP operations.	Perform system service connections at defined electrical interface points for operations (startup and commissioning) power.	No Action	Support WTP system service connections at defined electrical interface points. Deliver power to the WTP site perimeter.
<b>6</b> Communicate changes to electrical supply and loads.	Notify MSC in advance of changes in load during operations.	No Action	Notify the WTP Contractor in advance of changes in WTP power supply.

## 2 Interface Background Information

This section contains background information pertinent to the electricity interfaces. For requirements, along with their basis, implementation, and configuration management, see Section 3. Other actions needed to complete the interfaces are listed in Section 4.

### 2.1 Physical Information

The physical interface locations for connection of the Hanford Site power grid to the WTP site (Nodes 7A, 7B and 12) are provided in 24590-WTP-B2-C12T-00001, *Interface Control Drawing* (BNI 2018c).

#### 2.1.1 Construction Power

Temporary electrical power is required during construction of the WTP facilities. Three main WTP loads are supplied by the current temporary power supply. The physical interface for the primary 7 MW supply of construction power to the WTP Contractor is switch C8X747 at the power pole location shown as Node 12 on the *Interface Control Drawing* (BNI 2018c). Temporary construction power is also provided from overhead transmission lines that feed the T43/47 area from switch C8X869 on power pole number E1080 located alongside the road, west of the T43 warehouse (24590-CM-HC1-UA11-00001-04-00072, *RPP/WTP T-43/T-47 Electrical Service Plan*, BNI 2014a; 24590-CM-HC1-UA11-00001-04-00068, *RPP/WTP T-43/T-47 Electrical Service Transformer Details*, BNI 2014b; and 24590-WTP-FSK-CON-T-01-001, *RPP-WTP Site Construction Facility Arrangement*, BNI 2019b). In addition, temporary construction power is required for Pit 30 aggregate mining operations. The forecast in 24590-WTP-ICD-MG-01-028, *ICD 28 - Interface Control Document for Pit 30 Aggregate Supply for Construction* (BNI 2012) indicates that up to 2 MW may be intermittently required between 2013 and 2019. No mining operations (or need for electrical power) are currently anticipated after 2019. Electrical power use associated with Pit 30 is not considered a subset of the 7 MW supply of construction power (ICD 28, BNI 2012). Similarly, temporary electrical power associated with the T43/47 area load (up to 0.5 MW) is not considered a subset of the 7 MW supply.

There is a possibility that the current temporary 7 MW power supply may be converted to a permanent power source for operations (being tracked by 24590-WTP-ATS-MGT-15-0369 in the WTP Action Tracking System and Open Item 0004 in the ICD Action Items List).

#### 2.1.2 Permanent Plant Power

The MSC provides permanent electrical power for operations to the WTP site prior to the start of the startup and commissioning phase of the project. Permanent power is provided by substation A6 located on the east side of the WTP site. Underground duct banks from switchgear Building 251E to the MSC/WTP physical interface point were used by the WTP Contractor to run permanent electrical cable to the electrical interface point in the 251E breaker panels. Previously, the physical interface for permanent (“operations”) electrical power to the WTP Contractor was at the end of the MSC controlled duct banks from switchgear Building 251E. In addition, the electrical interface for permanent electrical power to the WTP Contractor was at the 13.8 kV feeder cable attachment bus on the load-side of the MSC feeder breakers in substation A6 located in Building 251E.

Through a property transfer process carried out by the WTP Contractor, the cabling and duct banks between Building 87 and the A6 substation have been transferred to the US Department of Energy,

Richland Operations Office (RL) and MSC. This action involved transferring equipment and materials to RL and MSC through a declaration of excess property in accordance with the government property disposition process (*Government Property Disposition - ORP/RL Transfer Approval for DECEX-AS-18-0217 to Mission Support Alliance (U.S. Department of Energy, Richland Operations Office)*), 24590-WTP-DECEX-AS-18-0217, BNI 2018b). Associated records requested by MSC (Electrical Utilities division) were transferred to US Department of Energy, Office of River Protection (ORP) via CCN 297644, *BNI Transfer of Property – Cables and Duct Banks from WTP Project Building 87 to Substation A6*, (BNI 2018d) with the request for records to be provided to MSC. With completion of the transfer of the cabling and duct banks to MSC, the physical interface for the duct banks and 13.8 kV cabling is at the line side of the Building 87 switchgear, with the WTP scope starting at the line side of the switchgear in Building 87 and continuing downstream (Figure 1 and Figure 2). The *Interface Control Drawing* (BNI 2018c) has been updated to reflect that the interface boundary between MSC and WTP has been moved to the line side of the Building 87 switchgear. The transfer of the cabling and duct banks resolves and closes ICD 11 Open Item 007 in the WTP One System ICD Action Items List (also tracked by 24590-WTP-ATS-MGT-15-0426 in the WTP Action Tracking System).

With the improvements regarding margin management having been incorporated into WTP Engineering processes and procedures, a revision to the load flow calculation (24590-WTP-E1C-MVE-00004, *Power System Load Flow Analysis*, BNI 2011) was considered to address the issue of adequate margin between power demand and substation supply capability. However, it was determined that a follow-on calculation specifically directed to DFLAW would be most supportive of DFLAW requirements and conditions. The follow-on calculation (24590-BOF-E1C-MVE-00014, *Direct Feed LAW (DFLAW) - Power System Load Flow Analysis*, BNI 2018e) has been prepared to address only the impacts from DFLAW; impacts from the HLW and PT Facilities will be addressed in a future revision. This forecast commitment is tracked by 24590-WTP-ATS-MGT-15-0441 in the WTP Action Tracking System (ICD Action Items List, ICD 11, Open Item 0008).

It has been concluded that there is no concern that the WTP load demand will exceed A6 substation capacity of 55 MW (RPP-RPT-46992, *Analysis of Power Delivery to the WTP to Achieve a Minimum of 70MW (76.4MVA)*, WRPS 2010). However, as design continues, it is expected that changes associated with the HLW and PT Facilities could affect the WTP power requirements.

The WTP Contractor has determined that an additional Preferred Power Source (PPS) is required for WTP Building 89 (safety system switchgear building). However, the exact capacity of the PPS can only be determined when safety loads for the HLW and PT Facilities are finalized. The additional PPS would be separate from the construction power supply described above. The commitment to specify requirements for the additional PPS is tracked by 24590-WTP-ATS-MGT-15-0205 in the WTP Action Tracking System (ICD Action Items List, ICD 11, Open Item 0006).

## 2.2 Administrative Information

This section provides background information on the administration and operation of the electricity interfaces.

### 2.2.1 Safety Information

The respective organizations' design processes include integrated safety management principles and are communicated through the interfaces in the configuration management documents identified in Section 3.

No new hazards or accident scenarios are introduced through the interfaces that are not adequately controlled by the interface partners by controls placed across the interfaces. The physical and administrative controls to mitigate potential risks using a graded approach have been adequately addressed through requirements on each contractor's authorization basis; no additional physical and administrative controls are necessary. Any new identified hazards or accident scenarios will be evaluated, and controls implemented as necessary.

### 2.2.2 Regulatory Information

No regulatory requirements are associated with the interfaces addressed in this ICD. However, contractual commitments require WTP compliance with codes and standards. The designs of the DFLAW power distribution system and protection relays comply with the Institute of Electrical and Electronics Engineers (IEEE) standards listed below. These standards are important considerations regarding the WTP electrical interfaces with the MSC.

- IEEE 141-1993, *IEEE Recommended Practice for Electrical Power Distribution for Industrial Plants*
- IEEE 242-2001, *IEEE Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems*
- IEEE 399-1999, *IEEE Recommended Practice for Industrial and Commercial Power System Analysis*
- IEEE 80-2013, *IEEE Guide for Safety in AC Substation Grounding*

The first three of the above standards are used in the plant power system load flow analysis and in the protection relay coordination studies. IEEE 80-2013 is important in the WTP ground grid design for DFLAW as the A6 substation ground grid system is tied to the WTP plant ground grid, 24590-BOF-EG-E41T-00001, *WTP Site Grounding Grid* (BNI 2017).

### 2.2.3 Post-Commissioning/Maintenance

Post-commissioning and maintenance activities are supported by operating instructions such as those in 24590-BOF-50-IOM-0002, *BOF Electrical Power Distribution Operating Manual* (WTCC 2019a) and operational readiness processes that include incremental achievement and verification of readiness as facilities and systems reach completion and are placed into service. Readiness activities for Building 87 are identified in 24590-BOF-PL-OP-17-0001, *Balance of Facilities Facility Readiness Plan* (WTCC 2019b).

WTP startup and operating procedures for Building 87 and MSC operating procedures for substation A6 include steps and necessary information to facilitate communications and interactions between WTP and MSC personnel. WTP can apply Section 3.3.1.2 to request support from the MSC.

For activities requiring WTP site access for personnel and equipment, MSC directs requests to the WTP Contractor as described in Section 3.3.3.4. During WTP startup and commissioning project phases, MSC provides notifications to the WTP Contractor per Section 3.3.3. The WTP Contractor notifies MSC of changes per Section 3.3.1.3 and Section 3.3.1.4.

The WTP Contractor provides annual updates on the amount of electrical power required for facility construction and operations (startup and commissioning) as directed in Section 3.3.1.1. The forecast is sent from WTP to ORP as a formal letter that includes TOC, MSC, and RL on distribution. This forecast commitment is tracked by 24590-WTP-ATS-MGT-13-0492 in the WTP Action Tracking System (ICD Action Items List, ICD 11, Open Item).



Ongoing coordination between the WTP and MSC includes sharing and reviewing design and implementation information (e.g., breaker/relay type and set points) on both sides of the interfaces. Any changes that may affect the interfaces are mutually agreed upon before any actions are taken. WTP and MSC coordinate electrical system processes to achieve optimum levels of equipment protection and performance.

No deactivation or reliability, availability, maintainability, and inspectability (RAMI) considerations have been identified that require management across the interface. Systematic RAMI assessments of this interface have not been conducted.

#### 2.2.4 Interface Schedule

Refer to the One System DFLAW Integrated Program Schedule for monitoring appropriate interface schedule milestones.

#### 2.3 Acceptance Criteria

Voltage (13.8 kV) measured at each substation A6 transformer secondary is maintained in accordance with ANSI C84.1-2006, Table 1 as identified in Section 3.1.3.3.

### 3 Requirements

This section identifies all Technical (Design Criteria), Activity Level, and Programmatic requirements associated with the interfaces defined by the ICD. Specific requirements for implementation by the appropriate contractors are listed in this section. In addition to the requirement statement, each requirement includes a basis for that requirement, the requirement source document(s), and the implementing document(s) (if known at the time of revision). Source and implementing documents are listed as configuration management items for each requirement.

#### 3.1 Technical Requirements (Design Criteria)

Technical requirements are requirements managed by engineering organizations according to engineering procedures and work processes.

##### 3.1.1 WTP Contractor Technical Requirements

3.1.1.1 The WTP permanent plant electrical power consumption during operations shall be limited to the maximum capacity rating of a single 62 MVA (55 MW) transformer.

**Requirement Basis:** Two independent 62 MVA transformers and associated load group switchgear feeders are available at the A6 substation. The WTP plant electrical load must be constrained to the maximum capacity of one of the A6 substation transformers (62 MVA), in the event the other transformer/load group switchgear becomes unavailable due to maintenance or repair.

**Configuration Control Document(s):**

Requirement Source(s):

- *Basis of Design*, 24590-WTP-DB-ENG-01-001 (BNI 2018a)

Implementation:

- *Power System Load Flow Analysis*, 24590-WTP-E1C-MVE-00004 (BNI 2011)
- *Direct Feed LAW (DFLAW) – Power System Load Flow Analysis*, 24590-BOF-E1C-MVE-00014 (BNI 2018e)

- 3.1.1.2 The WTP Contractor shall ensure single-line diagram(s) of the WTP electrical power system designates the electrical isolation device(s) that interface with the MSC Electrical Utilities transmission and distribution system.

**Requirement Basis:** This requirement flows from MSC-PRO-EU-481 (MSA 2014) to ensure electrical isolation device(s) that interface with MSC's distribution system are provided and are identified on design documentation. Per MSC-PRO-EU-481 (MSA 2014), an electrical isolation device is a physical device (such as a circuit breaker, switch, or fuse) that prevents the transmission or release of energy.

**Configuration Control Documents:**

Requirement Source(s):

- *Electrical Utilities Interface Agreement With Facilities/Plants*, MSC-PRO-EU-481 (MSA 2014)

Implementation:

**7 MW Temporary Construction Power**

- *13.8 kV Temporary Power Distribution Single Line*, 24590-BOF-FSK-CON-E-05-005 (BNI 2019c)

**2 MW Aggregate Pit 30 Temporary Construction Power**

- *Central Pre-Mix Crusher Line Extension Layout and Profile*, 24590-QL-HC1-DB50-00001-14-01 (BNI 2001a)

**T-43/T-47 Warehouse Temporary Construction Power**

- *RPP/WTP T-43/T-47 Electrical Service Plan*, 24590-CM-HC1-UA11-00001-04-00072 (BNI 2014a)
- *RPP/WTP T-43/T-47 Electrical Service Transformer Details*, 24590-CM-HC1-UA11-00001-04-00068 (BNI 2014b)

**WTP Switchgear Building 87 Permanent Plant Power**

- *BOF Facilities Power Distribution (MVE) Main Single Line Diagram*, 24590-BOF-E1-MVE-00001 (BNI 2019a)

## 3.1.2 TOC Technical Requirements

No technical requirements have been identified for the TOC.

## 3.1.3 MSC Technical Requirements

- 3.1.3.1 MSC shall provide 13.8kV, 60 Hz, 3-phase electrical power to the WTP Contractor electrical distribution system for use in the construction, startup, commissioning, and permanent operations of the WTP. Electrical power shall be provided at the following locations and peak capacities:

- a) Deliver up to 7 MW at 0.95 power factor for temporary construction power to the interface point near WTP building T-71. The interface point is the load side of switch C8X747 on pole E2785 (Node 12 on *Interface Control Drawing*, BNI 2018c).
- b) Deliver up to 2 MW for temporary construction power to the interface point at Aggregate Pit 30 for intermittent aggregate mining activities. The interface point is the load side of switch C8X795 on pole G1861.
- c) Deliver up to 0.5 MW for temporary construction power to the interface point near the T-43/T-47 warehouse area. The interface point is the load side of switch C8X869 on pole E1080 (located west of the T-43 warehouse along Canton Avenue).
- d) Deliver up to 62 MVA (55 MW) for permanent plant electrical power at the interface points at the WTP Switchgear Building 87. The interface points for the feeder cables coming from the A6 substation to Building 87 is the cable termination at the WTP Switchgear Building 87 breakers SWGR-87001A-A2, SWGR-87001B-A2, SWGR-87002A-A2 and SWGR-87002B-A2 (Nodes 7A and 7B on *Interface Control Drawing*, BNI 2018c).

**Requirement Basis:** The WTP 10-year forecast for electrical power (*WTP 2018 Electrical Power 10-Year Forecast*, BNI 2018f) documents the current and anticipated future construction power demands. Per the referenced forecast, construction power will reflect a gradual decrease over time as electrical loads are moved from temporary power to permanent plant status. The permanent plant electrical power demand is estimated at 50.8 MW (excluding design growth and contingencies) per the *Power System Load Flow Analysis* (BNI 2011).

#### **Configuration Control Documents:**

##### Requirement Source(s):

- *Basis of Design*, 24590-WTP-DB-ENG-01-001 (BNI 2018a)
- *Power System Load Flow Analysis*, 24590-WTP-E1C-MVE-00004 (BNI 2011)
- *ICD 28 - Interface Control Document for Pit 30 Aggregate Supply for Construction*, 24590-WTP-ICD-MG-01-028 (BNI 2012)
- *WTP 2018 Electrical Power 10-Year Forecast*, CCN 305985 (BNI 2018f)
- *BNI Transfer of Property – Cables and Duct Banks from WTP Project Building 87 to Substation A6*, CCN 297644 (BNI 2018d)

##### Implementation:

##### 7 MW Temporary Construction Power

##### MSC-side of interface:

- *200 East Area Electrical Utilities Distribution Map*, H-13-000079, Sheet 14 (MSA 2016a)
- *200 East Area Electrical Utilities Switching Diagram*, H-2-2126, Sheet 6 (MSA 2018a)

##### WTP-side of interface:

- *13.8 kV Temporary Power Distribution Single Line*, 24590-BOF-FSK-CON-E-05-005 (BNI 2019c)

2 MW Aggregate Pit 30 Temporary Construction Power

MSC-side of interface:

- *200 East Area Electrical Utilities Distribution Map*, H-13-000079, Sheet 10 (MSA 2018b)
- *200 East Area Electrical Utilities Switching Diagram*, H-2-2126, Sheet 6 (MSA 2018a)
- *Temporary 3 Ph. 15KV Primary Service to Pit 30 (600 Area) Supplies @ 1500 KVA XFMR (Customer Owned)*, HNF-FMP-01-9442-R0 (FH 2001)

WTP-side of interface:

- *Central Pre-Mix Crusher Line Extension Layout and Profile*, 24590-QL-HC1-DB50-00001-14-01 (BNI 2001a)
- *Central Pre-Mix Crusher Line Extension Typical Pole Details*, 24590-QL-HC1-DB50-00001-14-02 (BNI 2001b)
- *Central Pre-Mix Crusher Line Extension Guy Details*, 24590-QL-HC1-DB50-00001-14-03 (BNI 2001c)

T-43/T-47 Warehouse Temporary Construction Power

MSC-side of interface:

- *200 East Area Electrical Utilities Distribution Map*, H-13-000079, Sheet 6 (MSA 2018c)
- *200 East Area Electrical Utilities Switching Diagram*, H-2-2126, Sheet 5 (MSA 2018d)

WTP-side of interface:

- *RPP/WTP T-43/T-47 Electrical Service Plan*, 24590-CM-HC1-UA11-00001-04-00072 (BNI 2014a)
- *RPP/WTP T-43/T-47 Electrical Service Transformer Details*, 24590-CM-HC1-UA11-00001-04-00068 (BNI 2014b)

WTP Switchgear Building 87 Permanent Plant Power

MSC-side of interface:

- *200 East Area Electrical Utilities Distribution Map*, H-13-000079, Sheet 14 (MSA 2016a)
- *A6 230 kV & 13.8 kV Simplified One-Line*, H-2-829795, Sheet 1 (MSA 2013)
- *A6 230 kV & 13.8kV One-Line Diagram*, H-2-829796, Sheet 1 (MSA 2018e)
- *A6 – WTP Electrical Utilities Switching Diagram*, H-2-831247, Sheet 1 (MSA 2016b)
- *251W (A8) and 251E (A6) Substation Load and Capacity Evaluation*, RPP-RPT-59589 (WRPS 2016)
- *A6 13.8KV Relay Settings Sheets SEL Feeder Relay Setting Sheets*, HNF-SD-LL-ES-004 C.3 (MSA 2018f)

WTP-side of interface:

- *BOF Facilities Power Distribution (MVE) Main Single Line Diagram*, 24590-BOF-E1-MVE-00001 (BNI 2019a)
- *Protective Devices & Relay Coordination - Building 87 BOF 13.8 KV Switchgear and 480 V Power Panels (Non-Safety)*, 24590-WTP-E1C-MVE-00008 (BNI 2018g)

- *Protective Device & Relay Setting Document for Building 87 BOF 13.8 KV Switchgear and 480 V Power Panel (Non-Safety)*, 24590-B87-E1R-MVE-00001 (BNI 2018h)

3.1.3.2 MSC shall provide two independent utility substation transformers and associated load group switchgear feeders at substation A6, with each transformer and associated load group switchgear feeders capable of supplying permanent plant power for the entire WTP plant electrical load, up to 62 MVA (55 MW).

**Requirement Basis:** Two independent utility substation transformers and associated load group switchgear feeders are necessary to keep the WTP operating in the event one of the two utility substation transformers or load group switchgear becomes unavailable. The design basis for WTP plant electrical load shall not exceed 62MVA at the defined parameters of 13.8 kV, 60 Hz, 3-phase.

**Configuration Control Documents:**

Requirement Source(s):

- *Basis of Design*, 24590-WTP-DB-ENG-01-00 (BNI 2018a)

Implementation:

- *Design Calculations for Project W519*, HNF-5538 (MSA 2016c)
- *A6 230 kV & 13.8 kV Simplified One-Line*, H-2-829795, Sheet 1 (MSA 2013)
- *A6 230 kV & 13.8kV One-Line Diagram*, H-2-829796, Sheet 1 (MSA 2018e)
- *A6 – WTP Electrical Utilities Switching Diagram*, H-2-831247, Sheet 1 (MSA 2016b)

3.1.3.3 MSC shall maintain voltage (13.8 kV) measured at each substation A6 transformer secondary in accordance with ANSI C84.1-2016, Table 1 (ANSI 2016) as follows:

- Voltage Range A 14,490 – 13,460 VAC
- Voltage Range B 14,520 – 13,110 VAC

**Requirement Basis:** ANSI C84.1-2016 establishes nominal voltage ratings and operating tolerances for 60Hz electric power systems above 100 volts.

**Configuration Control Documents:**

Requirement Source(s):

- *Electric Power Systems and Equipment – Voltage Ratings (60 Hertz)*, ANSI C84.1-2016

Implementation:

- *Hanford Transmission and Distribution System (INFRA-T&D) System Design Description*, HNF-59666, Section 3.6.4 (MSA 2016d)

## 3.2 Activity Level Requirements

Activity level requirements are facility and functional requirements that require incorporation into the work planning process. These include repetitive use requirements that are typically implemented in an operating technical procedure or preventative maintenance work package. They may also include task

specific requirements that must be complied with when completing a specific scope of work, such as a repair or replacement of a component. These are typically performed within a maintenance work control document.

### 3.2.1 WTP Contractor Activity Level Requirements

- 3.2.1.1 Notify the MSC Electrical Utilities Dispatch Center (509-373-2321) in the event of an unplanned trip of a breaker at the electrical interfaces.

**Requirement Basis:** This communication requirement is established for all electrical utility users in the *Electrical Utilities Interface Agreement With Facilities/Plants*, MSC-PRO-EU-481 (MSA 2014). This requirement establishes a response in the event of an unplanned trip of a breaker at the electrical interfaces.

**Configuration Control Document(s):**

Requirement Source(s):

- *Electrical Utilities Interface Agreement With Facilities/Plants*, MSC-PRO-EU-481 (MSA 2014)

Implementation:

- Implementing mechanism(s) and traceability shall be established within the WTP Requirements Management Program. The current implementation status can be obtained from the Plant Management Requirement Area Manager (RAM) as identified in *Designation of Requirement Area Managers and Subject Matter Experts*, 24590-WTP-LIST-RARM-RM-0001 (BNI 2019d).

- 3.2.1.2 Notify the MSC Electrical Utilities Dispatch Center (509-373-2321) 14 days in advance of periodic testing of WTP Contractor standby or emergency generators.

**Requirement Basis:** These events may potentially impact the high-voltage electrical distribution and transmission system at Hanford. A notification period of 14 days is considered reasonable and practical.

**Configuration Control Document(s):**

Requirement Source(s):

- None

Implementation:

- Implementing mechanism(s) and traceability shall be established within the WTP Requirements Management Program. The current implementation status can be obtained from the Plant Management RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts* (BNI 2019d).

### 3.2.2 TOC Activity Level Requirements

There are no activity level requirements for the TOC.

### 3.2.3 MSC Activity Level Requirements

There are no activity level requirements for the MSC.

## 3.3 Programmatic Requirements

Programmatic requirements include those specified through the contract; federal, state, and local laws and regulations; DOE directives; and negotiated agreements such as memorandums of agreement, commitments and permits.

### 3.3.1 WTP Contractor Programmatic Requirements

3.3.1.1 Provide the average and peak electrical power demand 10-year forecast to DOE by May 1 of each year.

**Requirement Basis:** RL requires MSC to prepare a consolidated report for the Hanford Site of the electrical power needs for the next 10 years. This report is then provided to Bonneville Power Administration (BPA) which supplies power to the Hanford Site. The purchase of electrical power is scheduled 10 years at a time.

**Configuration Control Document(s):**

Requirement Source(s):

- *MRBS: BPA 10-Year Load Forecast Report, EU-PRO-EU-60995 (MSA 2017b)*

Implementation:

- Implementing mechanism(s) and traceability shall be established within the WTP Requirements Management Program. The current implementation status can be obtained from the Plant Management RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts (BNI 2019d)*.

3.3.1.2 Request specific work or assistance regarding electrical power from the MSC using the process described in *Electrical Utilities Customer Service Requests Process, MSC-PRO-EU-478 (MSA 2017a)*. The service request must precede the service date by at least 28 days.

**Requirement Basis:** The *Electrical Utilities Customer Service Requests Process (MSA 2017a)* is the standard process to request MSC Electrical Utilities services.

**Configuration Control Document(s):**

Requirement Source(s):

- *Electrical Utilities Customer Service Requests Process (MSA 2017a)*

Implementation:

- Implementing mechanism(s) and traceability shall be established within the WTP Requirements Management Program. The current implementation status can be obtained from the Plant Management RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts (BNI 2019d)*.

- 3.3.1.3 Notify the MSC Electrical Utilities Dispatch Center (509-373-2321) as soon as possible in the event of changes to the electrical protective devices at the WTP side of the electrical interfaces.

**Requirement Basis:** This communication requirement is established for electrical utility users in the *Electrical Utilities Interface Agreement With Facilities/Plants* (MSA 2014). This requirement establishes an action in advance of planned activities that may switch (to open or close) the breakers at the electrical interfaces.

**Configuration Control Document(s):**

Requirement Source(s):

- *Electrical Utilities Interface Agreement With Facilities/Plants*, (MSA 2014)

Implementation:

- Implementing mechanisms and traceability shall be established within the WTP Requirements Management Program. The current implementation status can be obtained from the Plant Management RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts* (BNI 2019d).

- 3.3.1.4 Notify the MSC Electrical Utilities Dispatch Center (509-373-2321) 14 days in advance of the following:

- Any planned changes of 5 MW or greater in the operations electrical load.
- Planned changes to the electrical protective devices at the WTP side of the electrical interfaces.

**Requirement Basis:** These events may potentially impact the high-voltage electrical distribution and transmission system at Hanford. A notification period of 14 days is considered reasonable and practical.

**Configuration Control Document(s):**

Requirement Source(s):

- None

Implementation:

- Implementing mechanisms and traceability shall be established within the WTP Requirements Management Program. The current implementation status can be obtained from the Plant Management RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts* (BNI 2019d).

### 3.3.2 TOC Programmatic Requirements

There are no programmatic requirements for the TOC.



### 3.3.3 MSC Programmatic Requirements

3.3.3.1 Review forecasts of WTP electrical power requirements to determine if it is within the capabilities of the electrical transmission and distribution system.

If the current capacity is not sufficient:

- Support the planning for any needed changes.
- Notify Bonneville Power Administration (BPA) of planned changes 3 years in advance of any changes.

**Requirement Basis:** MSC is responsible for operating and maintaining the Hanford Site electrical power transmission and distribution system for RL and advising RL on needed changes. RL is responsible to ensure the system will meet the needs of the Hanford Site users. RL coordinates with BPA, who is the Transmission Operator for the Hanford Site, to ensure there is sufficient electrical power for the Hanford Site.

**Configuration Control Document(s):**

Requirement Source(s):

- *Mission Support Contract*, DOE Contract DE-AC06-09RL14728 (DOE 2009)

Implementation:

- *Electrical Utilities Work Management*, EU-PRO-WC-60778 (UE-A-22.27) (MSA 2019).
- *MRBS: BPA 10-Year Load Forecast Report*, EU-PRO-EU-60995 (MSA 2017b).

3.3.3.2 Notify the WTP Contractor Shift Operations Manager (509-420-3597) at least 14 days in advance of scheduled changes in WTP electrical power supply configuration including interruption of services and maintenance that is expected to reduce availability or reliability.

**Requirement Basis:** Interruption of electrical service will impact the WTP. A notification period of 14 days is considered reasonable and practical to provide time to mitigate any planned service interruptions.

**Configuration Control Document(s):**

Requirement Source(s):

- None

Implementation:

- *EU General Switching*, EU-PRO-OP-60777 (UE-A-22.04) (MSA 2018g).

3.3.3.3 Notify the WTP Contractor Shift Operations Manager (509-420-3597) in the event of an emergency regarding the electrical transmission and distribution system.

**Requirement Basis:** Prompt communication is required to keep the Shift Operations Manager cognizant of abnormal and emergency conditions.

**Configuration Control Document(s):**

Requirement Source(s):

- None

Implementation:

- *Electrical Utilities Alarm Response*, EU-PRO-ARP-60749 (UE-R-22.01) (MSA 2018h).

3.3.3.4 Notify the WTP for needed access to the WTP site.

- Provide a list of authorized personnel to the WTP Safeguards and Security Manager (509-373-8593) to coordinate unescorted access to the A6 substation.
- For all other locations within the WTP, notify the WTP Shift Operations Manager (509-420-3597) to coordinate escorted access. An alternative contact is the Area Superintendent, Distribs (509-373-8015).

**Requirement Basis:** MSC staff do not have WTP site brown badges. The WTP site access procedure establishes the work process to allow visitors who perform physical “hands on” work activities access to WTP.

**Configuration Control Document(s):**

Requirement Source(s):

- *WTP Jobsite Access and Conduct*, 24590-WTP-GPP-RAGS-GS-0001 (WTCC 2019c)

Implementation:

- The implementing mechanism(s) shall be issued by the MSC. The current implementation status can be obtained from the One System RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts* (BNI 2019d).

## 4 Requisite Interface Items

Some interfaces may have additional actions to be performed to establish a complete interface. Any of these actions that do not fall into the above requirements categories are listed as requisite interface items. These items are typically single actions to be performed prior to commissioning. A requisite interface item is considered completed when objective evidence is provided to verify the action was performed. The requisite interface items are excluded from the WTP Requirements Management Program and associated procedures. The One System Requirements Area Manager may use the requirements management tool to track requisite interface items.

### 4.1 WTP Contractor Requisite Interface Items

No requisite interface items were identified for the WTP Contractor.

### 4.2 TOC Requisite Interface Items

No requisite interface items were identified for the TOC.

### 4.3 MSC Requisite Interface Items

No requisite interface items were identified for the MSC.

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## Appendix A - ICD 24590-WTP-ICD-MG-01-011 Issues and Open Items

NOTE: This appendix lists open ICD issues, ICD issues that have been closed since the last revision, and new ICD open items. New open items are added to each ICD revision with a tracking number or schedule activity to track their completion outside the ICD. Open items are removed from the ICD in the next revision following their introduction.

Issue/Action/ Open Item No.	Description	Tracking No	Responsible Org.	Responsible Actionee	Originator	Status/ Due Date	Support Information / Basis for Closure	Comments
Action A11-20	Complete incorporation of the interface protocols described in Section 2.2.6 into the appropriate WTP and MSC startup and operating procedures in order to ensure that energizing the Building 87 busses from Substation A6 takes place as smoothly as possible. WTP and MSC startup and operating procedures for Building 87 and substation A6 should include steps and any necessary information to facilitate communications and interactions between WTP and MSC personnel. These protocols should include such areas as badging, access control, training, LOTO, etc.	24590-WTP-ATS-MGT-13-0484; MSC ESTARS Number: BOYNTON_SCOTTA-2013-0001	WTP	John Jordan	Not available	Closed 8/30/16	RESOLUTION: Since the need for the incorporation of interface protocols exists in both WTP and MSC documents, the ICD Action is shared between the two organizations. The need for better integrated interface protocols became apparent in 2012, when it was thought that energization was imminent. Both WTP and MSC personnel spent to figure out exactly what was needed in order to allow them to access Bldg 87 and A6. The intent of this ICD Action is to anticipate and resolve the problems that both groups might encounter getting access to the other's facility, thereby making the energization of Building 87 from the A6 Substation as smooth and efficient an evolution as possible. If changing conditions require an adjustment to the planned date for energizing Bldg 87 from Substation A6, the target date for closure of this ICD Action and ATS item will need to be adjusted accordingly. The current process plan for transfer of cables and duct banks from WTP to MSC includes the following: <ul style="list-style-type: none"> <li>• Property is transferred from one government contract for use on another government contract via transfer order.</li> <li>• The transfer will be for the cabling and duct banks between Building 87 and the MSC Switchgear Building 251E (A6 substation).</li> <li>• MSC will not take possession of the switchgear in Building 87 nor the building itself. Only the system will be transferred, not the facility.</li> <li>• Currently the cabling and duct banks are considered "Government Personal Property," as opposed to "Real Property."</li> <li>• The transfer package will be developed in 2016.</li> <li>• Transfer will occur after system is turned over to WTP Plant Operations (currently 2017).</li> <li>• WTP Plant Operations will determine the implementation date/milestone for transfer.</li> </ul>	
Open Item 0009	RL will evaluate and provide the reliability and potential down time for the power service, and potential path forward to mitigate it, if any. Accordingly, ORP will evaluate what additional mitigative actions may be needed at WTP.	TBD	RL / ORP	Sharee Dickinson / Wahed Abdul		Open		

ICD 11 has no open issues. One new open item (above) has been identified for this revision of ICD 11. Refer to the ICD Action Items List for current open items.