TSR Compliance

Perform Scheduled Electrical Power Outage on AZ156 and AZ801A Systems and Equipment

Tank Farm Plant Operating Procedure

USQ # TF-18-1525-D, Rev. 0

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure supports a planned 156-AZ electrical power outage for maintenance, inspection, cleaning, or replacement of electrical equipment.

1.2 Scope

This procedure may be performed by de-energizing main farm isolations fed from C8X575 Utilities pole switch and downstream.

This outage may de-energize equipment powered VIA the Motor Control Centers (MCC’s) located in the 241-AZ-156 building and the 241-AZ-801A building. Individual Panel boards and Disconnect Switches Fed from these MCC’s, will be operated to the applicable maintenance procedures. The 241-AZ-156 building equipment is associated with the 241-AZ-101 Mixer Pumps, panel boards and heaters and the associated equipment. The 241-AZ-801A building equipment is also associated with the AZ farm panel boards, floodlights, Annulus ventilation system, and transfer pumps in AZ farm. The AZ farm Primary Ventilation System is NOT affected by this outage procedure and power will be available to the recirculation modules, primary tank inlet stations, and the new primary tank pressure monitoring equipment installed by 241-AZ-702 Ventilation System. Fire systems effected: None. Buildings effected: AZ156 and AZ801A.

Turning power off to 241-AZ-801A will cause TMACS to lose communication with AY/AZ ENRAF Leak Detection.

2.0 INFORMATION

2.1 General Information

2.1.1 Resources needed:

- NCO
- Instrument Tech
- IHT
- HPT
- Electricians
- SOE.
3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

3.1.1 Personnel trained in the operation of breakers and disconnects will wear the following PPE as a minimum:
- Non-melting (untreated natural fiber) long-sleeved shirt
- Safety glasses
- Leather or insulating gloves
- Hearing protection.

3.1.2 Compliance with DOE-0336, Hanford Site Lockout/Tagout Procedure or DOE-0359, Hanford Site Electrical Safety Program is required when working this procedure.

3.1.3 Ensure an Electrical Hazard Evaluation has been completed to address shock and arc flash hazards.

3.2 Radiation and Contamination Control

3.2.1 When this procedure is worked in radiological areas, an approved radiological work permit (RWP) is required. If radiological conditions or work performed falls outside the scope of the RWP, all work activities must be discontinued until a new or revised RWP has been issued in accordance with TFC-ESHQ-RP_RWP-C-03.
3.3 **Environmental Compliance**

NOTE - Notify Environmental prior to power outage (suggested 7 days) and TMACS prior to (morning of) power outage.

- The following systems will be inoperable for the duration of the power outage:
  - AZ tanks primary ENRAFs
  - AZ Annulus ventilation
  - AZ Cathodic Protection
  - TMACS communication for AY annulus and primary ENRAFs
  - Annulus CAMs
  - AZ-151 Tank Level Indicating Transmitter
  - PLC for MCS system.

- The Following system may continue to operate on temporary power:
  - AZ tank annulus ENRAFs.

3.3.1 The Environmental representative shall verify that the following are completed per OSD-T-151-00031:

3.3.1.1 Washington State Department of Ecology is notified of the outage and/or use of any alternate leak detection systems.

3.3.1.2 Alternate leak detection requirements during the outage are documented in a letter/internal memo from the Environmental Compliance manager to the Senior Level 1 manager of Production Operations.

3.3.1.3 Ecology is notified of Out-of-Service (OOS) conditions, with a schedule from 3.3.2.2a, extending beyond 90 days.
3.3 Environmental Compliance (Cont.)

3.3.2 Operations shall:

3.3.2.1 For outages greater than 24 hours and requiring alternative leak detection, implement monitoring requirements per internal memo generated in 3.3.1.2.

NOTE - OSD-T-151-00031 required leak detection systems shall be restored to service as soon as possible.

3.3.2.2 Track the leak detection system or device outage on the TSR/Environmental Equipment OOS section of the TOC Daily Report with an initial “Required By Date” not to exceed 90 days.

a. Prepare a recovery plan representing returning the leak detection system, or device, back to service as soon as possible should the OOS condition reach 90 days. Provide the recovery plan schedule to the Environmental Representative for completion of 3.3.1.3.

3.3.3 Per WAC 173-303-640 and TFC-ESHQ-ENV-FS-C-01, Environmental Notification, Environmental must be notified if Cathodic Protection System will be de energized.

3.4 Limits

TECHNICAL SAFETY REQUIREMENTS

HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements
LCO 3.10 Waste Transfer Freeze Protection
LCO 3.11 DST Annulus High-Level Alarm

OPERATING SPECIFICATIONS DOCUMENT

OSD-T-151-00007 Operating Specifications for the Double-Shell Storage Tanks
OSD-T-151-00031 Operating Specifications for Tank Farm Leak Detection and Single Shell Tank Intrusion Detection
4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

The following equipment and materials may be needed to perform this outage:

- Portable light plants
- Portable Generators
- Signs and Barricades
- Voltage rated gloves
- Other tools, equipment and supplies as identified by Shift Manager/OE/FWS/User.

4.2 Performance Documents

The following procedures and drawings may be needed to perform this procedure:

- HNF-5183, Tank Farms Radiological Control Manual (TFRCM)
- TO-060-140, Operate 241-AZ Annulus Ventilation System
- H-14-030007, Electrical One Line Diagram
- TF-OR-DR-AZ, AZ Daily Rounds
- TFC-OPS-OPER-C-39, Caution Tags
- TFC-OPS-OPER-C-22, Control and Use of Administrative Locks
- 5-CATH-221, Inspection of Cathodic Protection System Rectifiers
- DOE-0336, Hanford Site Lockout/Tagout Procedure
- DOE-0359, Hanford Site Electrical Safety Program.
4.3 Field Preparation

**Special Instructions**

Individual steps in this section may be worked in any logical order or in parallel.

**NOTE** - Signature Sheet 1 requirement is on-going as new individuals become involved in the procedure.

4.3.1 **ENSURE** all personnel involved in signatory steps of this procedure enter their printed name, signature and initials on Signature Sheet 1.

4.3.2 **IF** needed for outage, to support outage activities, **ENSURE** Utilities has been notified at 373-2077 prior to outage.

**Special Instructions**

Must receive Electric Utilities Building Outage Permit. OE must sign, copy, and return copy to sender.

4.3.3 **ENSURE** notification has been made to Utilities (suggested 7-14 days) in advance by filling out service request form at the following web address: http://msc.ms.rl.gov/ServiceCatalog/page.cfm/Utilities/ElectricalUtilitiesServices.

4.3.4 **ENSURE** notification has been made to TMACS (373-2618) before taking down power to the 156-AZ and 801-AZ building. Leak Detection and other associated alarms will be received during this outage.

4.3.5 **ENSURE** notification has been made to AN Team Electrical Field Work Supervisor that Cathodic Protection System will be de-energized.

4.3.6 **REQUEST** Shift Manager review the Lock & Tag Logbook, Caution Tag, and the Administrative Lock Logbook to determine whether currently installed locks and tags will interfere with this work scope.
4.3 Field Preparation (Cont.)

**Special Instructions**

Surveillance Requirement 3.5.1 requires annulus waste level be verified ≤ 15 inches within every 48 hours, therefore power must be restored, alternate power provided, or alternate means provided for leak detection to allow taking these readings.

4.3.7 **DETERMINE** if alternate power is available for the following AND **CHECK** one:

<table>
<thead>
<tr>
<th>Location / Equipment</th>
<th>Alternate power is available.</th>
<th>Alternate power is NOT available</th>
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<tbody>
<tr>
<td>AZ tanks primary ENRAFs</td>
<td></td>
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<td>AZ Annulus ventilation</td>
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<td>AZ Cathodic Protection</td>
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<td>AZ-151 Tank Level Indicating Transmitter</td>
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<td>AZ tank annulus ENRAFs</td>
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<tr>
<td>AZ DST Annulus High-Level Alarm (Automation)</td>
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</tbody>
</table>

_________________________________________ / ______________ / __________
Signature                                      Print (First & Last)          Date
Shift Manager /OE

4.3.8 **ENSURE** this outage is scheduled so as not to prevent leak detection monitoring in 101-AZ, and 102-AZ Tanks AND

**OBTAINING** level readings in 101-AZ, 102-AZ and 151-AZ tanks on a daily basis,

**OR**

**IF** “EITHER” liquid level readings or annulus leak detection monitoring cannot be taken, **ENSURE** Environmental has issued a letter which documents alternate leak detection requirements per OSD-T-151-00031. (osd-T-151-00031, RPP-16922, LCO 3.5)

4.3.9 **ENSURE** Environmental has been informed per Environmental on call list, of the intended planned outage of AZ-Farm.
Perform Scheduled Electrical Power Outage on AZ156 and AZ801A Systems and Equipment

4.3 Field Preparation (Cont.)

4.3.10 IF selected in Step 4.3.7, VERIFY the alternate leak detection requirement letter has been issued.

Signature: ___________________________ / Print (First & Last): ___________________________ / Date: ___________________________

ECO/Delegate

4.3.11 REQUEST OE conduct a review of all applicable farm rounds for outage impact to TSR and Environmental surveillance requirements AND IMPLEMENT any required mitigating actions.

Signature: ___________________________ / Print (First & Last): ___________________________ / Date: ___________________________

OE

4.3.12 IF Outage will render the AZ DST Annulus High-Level Alarm (Automation) INOPERABLE, CHECK that the requirements of LCO 3.11 can be met. (LCO 3.11).

Signature: ___________________________ / Print (First & Last): ___________________________ / Date: ___________________________

Shift Manager /OE

4.3.13 IF directed by Shift Manager, ENSURE AZ-Farm Annulus Ventilation System is SHUT DOWN per, TO-060-140. (OSD-T-151-00007)

4.3.14 IF directed by Shift Manager, SHUT DOWN each PLC for MCS system as follows:

NOTE - PLC chassis are located inside PLC cabinet AZ801A-WT-ENCL-104 and at AZ Annulus Exhauster skid for MCS system.

4.3.14.1 POSITION rocker switches on each PLC chassis in PLC enclosures AZ801A-WT-ENCL-104 to the “0” position.

NOTE - Condensate Transfers from AZ-301 are allowed during this outage.

4.3.15 IF primary level and secondary leak detection is not available, ENSURE no transfers (except for condensate transfers from AZ-301) are allowed, into or out of AZ-Farm Tanks during this electrical outage.
4.3 Field Preparation (Cont.)

**Special Instructions**

Individual "As-Found" breaker positions may be entered at any time prior to cleaning, and may be done in any sequence as directed by the field work supervisor.

NOTE - The following step and sub-step allows for variations of full or partial electrical power outages.

- As directed by Shift Manager/OE, depending on work to be performed during the power outage, breaker positions on Data Sheet 1, Data Sheet 2 and Data Sheet 3 may be N/A.

4.3.16 **VERIFY** the desired breaker position has been determined and position for outage marked for each breaker by Shift Manager/OE for the planned outage on the following:

- Data Sheet 1
- Data Sheet 2
- Data Sheet 3.

4.3.16.1 **FOR** equipment not affected by outage, **MARK** N/A.

---

**Signature** / **Print (First & Last)** / **Date**

*Shift Manager /OE*

4.3.17 **RECORD** the "As-Found" position of Circuit Breakers/Compartments on the following:

- Data Sheet 1
- Data Sheet 2
- Data Sheet 3.

4.3.18 **ENSURE** all Waste Transfer Pumps physically connected to AZ Farm are under administrative control.

4.3.19 **VERIFY** Section 4.3 has been completed.

---

**Signature** / **Print (First & Last)** / **Date**

*Shift Manager /OE*
5.0 PROCEDURE

5.1 Raise/Lower 101-AZ and 102-AZ annulus leak detector ENRAFs

Special Instructions
SY Settlement Agreement requires annulus waste level be taken within every 24 hours, therefore power must be restored or alternate power provided to allow taking these readings or Environmental has issued a letter per Step 4.3.8.

5.1.1 IF directed by Shift Manager, ESTABLISH Annulus Leak Detection operability as follows;

5.1.1.1 RAISE 101-AZ and 102-AZ annulus leak detector ENRAFs.

5.1.1.2 FREEZE ENRAFs into position.

5.1.1.3 SECURE normal power.

5.1.1.4 INSTALL temporary power.

5.1.1.5 UNLOCK ENRAFs.

5.1.1.6 LOWER ENRAFs to operating position.

5.1.2 RAISE 101-AZ and 102-AZ primary tank level ENRAFs approximately 36 inches above waste.

5.1.2.1 FREEZE ENRAFs into position.

5.1.2.2 SECURE power to ENRAFs.

5.1.2.3 ENSURE TMACs modems and CIU’s are OFF.
5.2 Shedding Loads and Lock and Tag Validations

5.2.1 OBTAiN permission from Shift Manager/OE to commence AZ-Farm power outage.

________________________________________ / __________________________ / ______________
Signature                     Print (First & Last)                   Date
FWS /OE

5.2.2 ENSURE Environmental has been informed per Environmental On Call List, of the intended planned outage of the Cathodic Protection System.

________________________________________ / __________________________ / ______________
Signature                     Print (First & Last)                   Date
Shift Manager /OE

5.2.3 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (refer to Section 3.1).

Special Instructions

Actions in Step 5.2.4 for Data Sheet 2 and Data Sheet 3 may be worked in sequence, parallel or simultaneously, as directed by the (FWS) Field Work Supervisor.

NOTE - As directed by Shift Manager/OE, depending on work to be performed during the power outage, loads on Data Sheet 1, Data Sheet 2 and Data Sheet 3 may be N/A.

5.2.4 OPEN (OFF) Circuit Breakers/Compartments listed on the following, for the work being performed:
  • Data Sheet 2
  • Data Sheet 3.
5.2 Shedding Loads and Lock and Tag Validations (Cont.)

**Special Instructions**

Actions in Step 5.2.6 for Data Sheet 1 may be worked in sequence, parallel or simultaneously, as directed by the (FWS) Field Work Supervisor.

**NOTE** - AZ156-EDS-MCC-001 (Data Sheet 1) is the main AZ-Farm distribution center for this procedure.

- As directed by Shift Manager/OE, depending on work to be performed during the power outage, loads on Data Sheet 1, Data Sheet 2 and Data Sheet 3 may be N/A.

5.2.5 **ENSURE** personnel trained in the operation of breakers and disconnects dons PPE (refer to Section 3.1).

5.2.6 **OPEN** (OFF) Circuit Breakers/Compartments listed on Data Sheet 1, for the work being performed.
5.3 Perform Electrical Maintenance Activities

5.3.1 **ENSURE** electrical power is isolated to applicable farm isolations fed from main pole utility feed C8X575, per applicable work package.

5.3.2 **IF** administrative locks are to be removed to support maintenance activities, perform the following:

5.3.2.1 **NOTIFY** Shift Manager/Delegate to specify and implement the correct administrative lock controls per TFC-OPS-OPER-C-22.

5.3.2.2 **REMOVE** any existing Administrative Locks as necessary to complete the maintenance activities.

5.3.3 **REMOVE** any existing locks and tags as necessary to complete the maintenance activities, in accordance with DOE-0336, Hanford Site Lockout/Tagout Procedure.

5.3.4 **REMOVE** any existing caution tags as necessary to complete the maintenance activities, in accordance with TFC-OPS-OPER-C-39, Caution Tags.

5.3.5 **PERFORM** maintenance activities, per applicable work document.

5.3.6 **ENSURE** all administrative locks removed during maintenance are "re-installed".

5.3.7 **ENSURE** all electrical circuits that will be locked out, after restoration of power, have their power supply breakers/switches in the OPEN/OFF position.

5.3.7.1 **ENSURE** locks/tags removed to perform maintenance and cleaning activities are re-installed, in accordance with DOE-0336, Hanford Site Lockout/Tagout Procedure.

5.3.8 **REINSTALL** any existing caution tags following completion of maintenance activities, in accordance with TFC-OPS-OPER-C-39, Caution Tags.

5.3.9 **ENSURE** all farm electrical equipment is in a safe configuration to be re-energized.

5.3.10 **ENSURE** all work is complete and tools/test equipment are removed from work areas.

_________________________ / ______________________ / 
Signature Print (First & Last) Date

Shift Manager/OE
5.4 Restoration

5.4.1 **OBTAIN** permission from Shift Manager/OE to clear lock and tag, to commence startup of Facility.

_________________________/_________________________ /_________________________  
Signature                  Print (First & Last)           Date

Shift Manager/OE

5.4.2 **ENSURE** personnel trained in the operation of breakers and disconnects dons PPE (refer to Section 3.1).

**Special Instructions**

AZ156-EDS-MCC-001 Data Sheet 1 is main AZ-Farm distribution center for this procedure. The Breakers/Compartments listed on Data Sheet 1, should be energized first in order to slowly restore power to the Farm.

5.4.3 **ENSURE** all applicable Breakers/Compartments listed on Data Sheet 1 are returned to “As Found” positions,

    **OR**

    IF directed by OE assigned to field work, **ENSURE** all applicable Breakers/Compartments listed on Data Sheet 1 are returned to position(s) dictated by current field conditions.
5.4 Restoration (Cont.)

Special Instructions

Actions in Step 5.4.4 for Data Sheet 2 and Data Sheet 3 may be worked in sequence, parallel or simultaneously, as directed by the (FWS) Field Work Supervisor.

NOTE - As directed by Shift Manager/OE, depending on work to be performed during the power outage, Breaker positions on Data Sheet 2 and Data Sheet 3 may be N/A.

5.4.4 USING the following data sheets, ENSURE all applicable Breakers/Compartments are returned to “As Found” positions,

OR

IF directed by OE assigned to field work, ENSURE all applicable Breakers/Compartments are returned to position(s) dictated by current field conditions:

- Data Sheet 1
- Data Sheet 2
- Data Sheet 3.

5.4.5 RAISE 101-AZ and 102-AZ annulus leak detector ENRAFs as follows:

5.4.5.1 RAISE the ENRAF.

5.4.5.2 FREEZE ENRAFs into position.

5.4.5.3 SECURE temporary power.

5.4.5.4 RETURN to normal power.

5.4.5.5 UNLOCK ENRAFs.

5.4.5.6 LOWER ENRAFs to operating position of 0.11” to 0.19”.

5.4.6 ENSURE TMACS and CIUs are operational.

5.4.7 TURN ON power to 101-AZ and 102-AZ Primary Tank Level ENRAFs.

5.4.8 RESTORE 101-AZ and 102-AZ Primary Tank Level ENRAFs to normal operations.
5.4 Restoration (Cont.)

5.4.9 IF directed by Shift Manager, **RESTART** each PLC for MCS system as follows:

NOTE - PLC chassis are located inside PLC cabinet AZ801A-WT-ENCL-104 and at AZ Annulus Exhauster skid for MCS system.

5.4.9.1 **ENSURE** TMACs modems are ON.

5.4.9.2 **POSITION** rocker switches on each PLC chassis in PLC enclosure AZ801A-WT-ENCL-104 for MCS system to the “I” position.

5.4.10 IF directed by Shift Manager/OE, **ENSURE** AZ-Farm Annulus Ventilation System is re-started per TO-060-140.

5.4.11 **COMPLETE** Inspection of Cathodic Protection System Rectifiers per 5-CATH-221 to verify all rectifiers are operational.

5.4.12 **ENSURE** any applicable alarms have cleared AND **INFORM** the TMACS operator (373-2618) and Shift Manager/OE, that Maintenance Outage is complete.

5.4.13 **NOTIFY** Environmental Field Representative of Date and Time power outage is complete and environmental systems, such as CATHODIC, have been restored.

5.4.14 **ENSURE** all fieldwork is complete and all applicable documentation in this procedure is filled out and signed.
5.5 Records

5.5.1 PERFORM the following for records identified within this procedure.

5.5.1.1 RECORD the number of times the record was generated in applicable column

OR

PLACE a check mark (✓) in the N/A column.

5.5.1.2 SUBMIT the package for verification of completed records.

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<th>Number of times completed</th>
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<td><strong>4.3 Field Preparation</strong></td>
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<td>Step 4.3.7</td>
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<td>Step 4.3.10</td>
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<td>Step 4.3.19</td>
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<td><strong>5.2 Shedding Loads and Lock and Tag Validations</strong></td>
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<td>Step 5.2.1</td>
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<tr>
<td><strong>5.3 Perform Electrical Maintenance Activities</strong></td>
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<td>Step 5.3.10</td>
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<td><strong>5.4 Restoration</strong></td>
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<td>Step 5.4.1</td>
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(Record Table Continued on Next Page)
5.5 Records (Cont.)

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<td>Data Sheet 2 - AZ156-EDS-MCC-002</td>
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<td>Signature Sheets</td>
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<tr>
<td>Signature Sheet 1</td>
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</tr>
</tbody>
</table>

**FWS/OE/Shift Manager** SEND the completed records to the Central Shift Office for records retention

_________________________/_________________________/ ________________
Signature                  Print (First & Last)         Date

Shift Manager /OE

The record custodian identified in the company-level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.
**Perform Scheduled Electrical Power Outage on AZ156 and AZ801A Systems and Equipment**

**Data Sheet 1 - AZ156-EDS-MCC-001**

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<thead>
<tr>
<th>COMPT.</th>
<th>DESCRIPTION</th>
<th>* AS-FOUND BKR. POS. ON/OFF (A, D, C)</th>
<th>POSITION FOR OUTAGE**</th>
<th>* AS-LEFT BKR. POS. ON/OFF (A, D, C)</th>
<th>INITIALS OUTAGE COMPLETE (AS-LEFT)</th>
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| A1     | AZ156-EDS-BKR-100  
MOTOR CONTROL CENTER 001  
MAIN BREAKER | A D C | | A D C | |
| A2     | METER | N/A | N/A | N/A | N/A |
| B1     | AZ156-EDS-BKR-101  
MOTOR CONTROL CENTER 004  
PRIMARY FEED | A D C | | A D C | |
| B2     | AZ156-EDS-BKR-102  
CONTROL TRAILER RECEPTACLE  
AZ801A-EDS-RCPT-101 POWER | A D C | | A D C | |
| B3     | AZ156-EDS-BKR-103  
SPRAY PUMP RECEPTACLE  
AZ801A-EDS-RCPT-102 POWER | A D C | | A D C | |
| B4     | AZ156-EDS-BKR-104  
MOTOR CONTROL CENTER 002  
MAIN BREAKER | A D C | | A D C | |
| B5     | AZ156-EDS-BKR-105  
ANNULUS VENTILATION EQUIPMENT | A D C | | A D C | |
| B6     | SPACE | N/A | N/A | N/A | N/A |
| B7     | AZ156-EDS-BKR-108  
MIXER PUMP AZ101-WST-P-001  
POWER SUPPLY | A D C | | | |
| B8     | AZ156-EDS-BKR-109  
MIXER PUMP AZ101-WST-P-002  
POWER SUPPLY | A D C | | A D C | |

**NOTE** - The “AS-FOUND and “AS-LEFT” columns are BEGINNING and ENDING visual verifications, initials (A, D, C) are for craft “INFORMATION ONLY” and may be identified by means of a [✓]. This “DOES NOT” AUTHORIZE removal or reinstallation of, lock and tags. A= Administrative lock, D = Danger Lock and Tag C= Caution tag.

**Shift Manager/OE to mark determination of required position for each breaker for the outage (see Step 4.3.16).**

**NOTE** - A bus extension was installed on AZ156-EDS-MCC-001 from compartment A1 that feeds AZ156-EDS-DP-120 making AZ156-EDS-DP-120 an integral part of AZ156-EDS-MCC-001. Therefore AZ156-EDS-DP-120 has been added to the subsequent pages of Data Sheet 1.

(Continued on Next Sheet)
### Perform Scheduled Electrical Power Outage on AZ156 and AZ801A Systems and Equipment

**Data Sheet 1 - AZ156-EDS-MCC-001 (Cont.)**

#### AZ156-EDS-MCC-001
(AZ156-EDS-DP-120)
AZ FARM SWITCHGEAR MOTOR CONTROL CENTER
FED FROM: C8X575 POLE DISCONNECT
(REFERENCE H-14-030007 Sheet 32 & 33)

<table>
<thead>
<tr>
<th>COMPT.</th>
<th>DESCRIPTION</th>
<th>* AS-FOUND BKR. POS. ON/OFF (A, D, C) [✓]</th>
<th>POSITION FOR OUTAGE**</th>
<th>* AS-LEFT BKR. POS. ON/OFF (A, D, C) [✓]</th>
<th>INITIALS OUTAGE COMPLETE (AS-LEFT)</th>
</tr>
</thead>
</table>
| C1     | AZ156-EDS-BKR-C1  
AZ156-VT-HVAC-002  
FED FROM MCC-001, COMPT A1 |   | A D C | A D C |                                      |
| C2     | AZ156-EDS-BKR-C2  
AZ156-WT-VFD-222  
FED FROM MCC-001, COMPT A1 |   | A D C | A D C |                                      |
| C3     | AZ156-EDS-BKR-C3  
AN156-WT-MTS-158A  
FED FROM MCC-001, COMPT A1 |   | A D C | A D C |                                      |
| C4     | AZ156-EDS-BKR-C4  
AN156-WST-VFD-103  
FED FROM MCC-001, COMPT A1 |   | A D C | A D C |                                      |
| C5     | AZ156-EDS-BKR-C5  
AN156-WT-VFD-104  
FED FROM MCC-001, COMPT A1 |   | A D C | A D C |                                      |
| C6     | AZ156-EDS-BKR-C6  
FED FROM MCC-001, COMPT A1 |   | A D C | A D C |                                      |
| C7     | AZ156-EDS-BKR-C7  
AN156-EDS-DP-124  
FED FROM MCC-001, COMPT A1 |   | A D C | A D C |                                      |
| C8     | AZ156-EDS-BKR-C8  
AN241-EDS-DP-123 (FUTURE)  
FED FROM MCC-001, COMPT A1 |   | A D C | A D C |                                      |
| C9     | AZ156-EDS-BKR-C9  
AN241-EDS-DP-122 (FUTURE)  
FED FROM MCC-001, COMPT A1 |   | A D C | A D C |                                      |
| C10    | AZ156-EDS-BKR-C10  
AZ156-EDS-DP-122  
FED FROM MCC-001, COMPT A1 |   | A D C | A D C |                                      |
| C11    | AZ156-EDS-BKR-C11  
SPARE  
FED FROM MCC-001, COMPT A1 |   | A D C | A D C |                                      |

*NOTE* - The “AS-FOUND and “AS-LEFT” columns are BEGINNING and ENDING visual verifications, initials (A, D, C,) are for craft “INFORMATION ONLY” and may be identified by means of a [✓]. This “DOES NOT” AUTHORIZE removal or reinstallation of, lock and tags. A= Administrative lock, D = Danger Lock and Tag C= Caution tag.

** - Shift Manager/OE to mark determination of required position for each breaker for the outage (see Step 4.3.16).

(Continued on Next Sheet)
TSR Compliance

Perform Scheduled Electrical Power Outage on AZ156 and AZ801A Systems and Equipment

Data Sheet 1 - AZ156-EDS-MCC-001 (Cont.)

<table>
<thead>
<tr>
<th>COMPT.</th>
<th>DESCRIPTION</th>
<th>* AS-FOUND BKR. POS. ON/OFF (A, D, C) [✓]</th>
<th>POSITION FOR OUTAGE**</th>
<th>* AS-LEFT BKR. POS. ON/OFF (A, D, C) [✓]</th>
<th>INITIALS OUTAGE COMPLETE (AS-LEFT)</th>
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<tbody>
<tr>
<td>C12</td>
<td>AZ156-EDS-BKR-C12 SPARE FED FROM MCC-001, COMPT A1</td>
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<tr>
<td></td>
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<td>A D C</td>
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<td>C13</td>
<td>AZ156-EDS-BKR-C13 AN24I-EDS-DP-121 FED FROM MCC-001, COMPT A1</td>
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<td>A D C</td>
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<td>A D C</td>
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<td>C15</td>
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<td>A D C</td>
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<tr>
<td>C16</td>
<td>AZ156-EDS-BKR-C16 AN156-WST-VFD-101 FED FROM MCC-001, COMPT A1</td>
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<td></td>
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<td>A D C</td>
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<td></td>
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<tr>
<td>C17</td>
<td>AZ156-EDS-BKR-C17 AN156-WST-VFD-102 FED FROM MCC-001, COMPT A1</td>
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<tr>
<td></td>
<td></td>
<td>A D C</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

* NOTE - The “AS-FOUND and “AS-LEFT” columns are BEGINNING and ENDING visual verifications, initials (A, D, C,) are for craft “INFORMATION ONLY” and may be identified by means of a [✓]. This “DOES NOT” AUTHORIZE removal or reinstallation of, lock and tags. A= Administrative lock, D = Danger Lock and Tag C= Caution tag.

** - Shift Manager/OE to mark determination of required position for each breaker for the outage (see Step 4.3.16).
**TSR Compliance**

**Perform Scheduled Electrical Power Outage on AZ156 and AZ801A Systems and Equipment**

Data Sheet 2 - AZ156-EDS-MCC-002

### AZ156-EDS-MCC-002
AZ-FARM CONTROL ROOM
MOTOR CONTROL CENTER
FED FROM: AZ156-EDS-MCC-001 COMPT. B4
(REFERENCE H-14-030007 Sheet 1)

<table>
<thead>
<tr>
<th>COMPT.</th>
<th>DESCRIPTION</th>
<th>* AS-FOUND BKR. POS. ON/OFF (A, D, C) [✓]</th>
<th>POSITION FOR OUTAGE**</th>
<th>* AS-LEFT BKR. POS. ON/OFF (A, D, C) [✓]</th>
<th>INITIALS OUTAGE COMPLETE (AS-LEFT)</th>
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<tr>
<td>A0</td>
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<td>NA</td>
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<td>A1L</td>
<td>AZ156-EDS-BKR-110 MINI POWER CENTER AZ156-EDS-DP-101 POWER SUPPLY</td>
<td>A D C</td>
<td>A D C</td>
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<tr>
<td>A1R</td>
<td>AZ156-EDS-BKR-111 AZ-156 HVAC UNIT VT-HVAC-101 POWER SUPPLY</td>
<td>A D C</td>
<td>A D C</td>
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<tr>
<td>A2L</td>
<td>AZ156-EDS-BKR-112 MINI POWER CENTER AZ101-EDS-DP-102/103 PWR SUPPLY</td>
<td>A D C</td>
<td>A D C</td>
<td></td>
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<tr>
<td>A2R</td>
<td>SPACE</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>A3</td>
<td>AZ156-EDS-BKR-113 AZ101 MIXER PUMP ROTATION MOTORS WST-003 &amp; WST-M-004 PWR SUPPLY</td>
<td>A D C</td>
<td>A D C</td>
<td></td>
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<tr>
<td>A4</td>
<td>SPACE</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>A5</td>
<td>SPACE</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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**- Shift Manager/OE to mark determination of required position for each breaker for the outage (see Step 4.3.16).
## TSRA Compliance

Perform Scheduled Electrical Power Outage on AZ156 and AZ801A Systems and Equipment

### Data Sheet 3 - AZ801A-EDS-MCC-004

#### Sheet 1 of 2

<table>
<thead>
<tr>
<th>COMPT.</th>
<th>DESCRIPTION</th>
<th>* AS-FOUND BKR. POS. ON/OFF (A, D, C) [✓]</th>
<th>POSITION FOR OUTAGE**</th>
<th>OUTAGE COMPLETE (AS-LEFT) ON/OFF (A, D, C) [✓]</th>
<th>INITIALS OUTAGE COMPLETE (AS-LEFT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>AZ801A-EDS-BKR-150 MOTOR CONTROL CENTER 004 400A MAIN BREAKER</td>
<td>A D C</td>
<td>A D C</td>
<td>A D C</td>
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<tr>
<td>A1</td>
<td>AZ801A-EDS-BKR-151 SPARE NEMA 3 STARTER</td>
<td>A D C</td>
<td>A D C</td>
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<td>A2</td>
<td>AZ801A-EDS-BKR-152 AZ801A-EDS-RCPT-120</td>
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<td>A3</td>
<td>AZ801A-EDS-BKR-153 AZ801A-EDS-RCPT-121</td>
<td>A D C</td>
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<tr>
<td>A4</td>
<td>AZ801A-EDS-BKR-154 SPARE NEMA 1 STARTER</td>
<td>A D C</td>
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<td>A5</td>
<td>SPACE</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>B2</td>
<td>AZ801A-EDS-BKR-156 DISTRIBUTION PANEL EDS-DP-104 POWER SUPPLY</td>
<td>A D C</td>
<td>A D C</td>
<td>A D C</td>
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<tr>
<td>B3L</td>
<td>AZ801A-EDS-BKR-157 DISTRIBUTION PANEL AZ801A-EDS-DP-123 POWER SUPPLY</td>
<td>A D C</td>
<td>A D C</td>
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<tr>
<td>B3R</td>
<td>AZ801A-EDS-BKR-158 IMPACT WRENCH STATION POWER SUPPLY</td>
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<tr>
<td>B4L</td>
<td>AZ801A-EDS-BKR-159 DISTRIBUTION PANEL AZ801A-EDS-DP-129 POWER SUPPLY</td>
<td>A D C</td>
<td>A D C</td>
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<tr>
<td>B4R</td>
<td>AZ801A-EDS-BKR-160 WELDING RECEPTACLE AZ02A-EDS-RCPT-106 POWER SUPPLY</td>
<td>A D C</td>
<td>A D C</td>
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<td></td>
</tr>
</tbody>
</table>

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** - Shift Manager/OE to mark determination of required position for each breaker for the outage (see Step 4.3.16).

(Continued on Next Sheet)
### TSR Compliance

**Perform Scheduled Electrical Power Outage on AZ156 and AZ801A Systems and Equipment**

**Data Sheet 3 - AZ801A-EDS-MCC-004 (Cont.)**

#### AZ801A-EDS-MCC-004

**AZ-FARM MOTOR CONTROL CENTER**

**FED FROM: AZ156-EDS-MCC-001 COMPT. B1**

(REFERENCE H-14-030007 Sheet 2)

<table>
<thead>
<tr>
<th>COMPT.</th>
<th>DESCRIPTION</th>
<th>* AS-FOUND BKR. POS. ON/OFF (A, D, C) [ ]</th>
<th>POSITION FOR OUTAGE**</th>
<th>OUTAGE COMPLETE (AS-LEFT) ON/OFF (A, D, C) [ ]</th>
<th>INITIALS OUTAGE COMPLETE (AS-LEFT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>AZ801A-EDS-BKR-162 CATCH TANK PUMP AZ151-WT-P-006 POWER SUPPLY</td>
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<td>C3</td>
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</tbody>
</table>

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** ** - Shift Manager/OE to mark determination of required position for each breaker for the outage (see Step 4.3.16).
Signature Sheet 1

All personnel performing signatory steps in this procedure must enter their printed name, signature and initials below.

<table>
<thead>
<tr>
<th>First &amp; Last (Printed)</th>
<th>Signature</th>
<th>Initials</th>
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