MEMORANDUM OF UNDERSTANDING:
INTERFACE BETWEEN
THE 242-A EVAPORATOR AND TANK FARM FACILITIES
Revision 15, Effective July 19, 2010

On October 27, 2003, the Tank Farm Documented Safety Analysis (DSA), RPP-13033, and associated Technical Safety Requirements (TSR), HNF-SD-WM-TSR-006, were implemented. The Tank Farms DSA and TSR documents were subsequently amended to implement DOE-STD-3009, Change Notice 3 in February 2010. The 242-A Evaporator DSA, HNF-14755, and associated TSR, HNF-15279, were implemented on November 17, 2003. The Tank Farms and 242-A Evaporator Facilities are each separately designated as Hazardous Category 2 nuclear facilities. Identification and effective management of facility interfaces is required by the respective facility safety bases.

This Memorandum of Understanding (MOU) identifies TSR interfaces, and delineates support activities, responsibilities, and division of duties necessary to ensure continued authorization agreement (AA) compliance and operational efficiency.

**Administrative Procedures & Instructions:** Unless otherwise referenced in this MOU, Operations administrative activities described in this MOU are performed in accordance with approved procedures and instructions.

**Administrative Locks:** A 242-A qualified Shift Manager will manage, and audit administrative locks associated with 242-A Evaporator operations. 242-A Evaporator administrative locks will be installed and managed in accordance with TFC-OPS-OPER-C-22, “Control and Use of Administrative Locks.”

**Caution Tags:** 242-A qualified Shift Managers will issue and maintain caution tags on components on 242-A equipment. Only 242-A qualified controlling organization Operators (NCO) and Stationary Operating Engineers (SOE) may hang caution tags in the 242-A Evaporator.

**Confined Space Control:** 242-A qualified Shift Managers will control and manage confined spaces in the 242-A facility.

**Emergency Response Organization (ERO):** Individual building emergency plans have been established for the Tank Farms and 242-A Evaporator facilities consistent with the applicable facility DSA. The on-duty 242-A Evaporator qualified Shift Manager will act as initial BED for the 242-A Evaporator facility, and, when appropriate, will turnover BED responsibilities to the Tank Operations Contractor Emergency Response Organization BED.
**Chain of Command:** Per TFC-PLN-05, Conduct of Operations Implementation Plan, “(Base Operations Area Managers are responsible for)...releasing, controlling and monitoring all tank farm and 242-A Evaporator field execution activities” (Section 2.1.1, second bullet).

**Event Investigation:** Security, Emergency Services and Events Investigation organization will perform event investigations for Base Operations, including the 242-A facility.

**Facility Management – 242-A Evaporator and Tank Farms:** For safety basis compliance purposes, the Manager, Base Operations is the designated Facility Manager for both the Tank Farm and 242-A Evaporator facilities. This designation is consistent with Tank Farms Administrative Control (AC) AC 5.2, and 242-A Evaporator AC 5.1.

**Health Physics Technician (HPT) Support to 242-A:** Base Operations Central Shift Operations will provide HPT support for shift routines, emergency response and backshift Access Control Entry System (ACES) services. Base Operations Radiological Control will provide HPT support on days and for other scheduled work activities. A 242-A qualified Shift Manager will review the surveillances for facility operational status and impacts. The responsible HPT First Line Supervisor will perform functional reviews and process HPT surveillance data as required.

**High Radiation Area (HRA) Control:** 242-A qualified Shift Managers will control and manage HRA within the 242-A facility.

**Lockout/Tagout:** 242-A Evaporator qualified Shift Managers will act as Lockout/Tagout (LOTO) Administrators for 242-A activities. Non 242-A qualified LOTO Administrators can install LOTOs at the Evaporator that support Tank Farm activities after obtaining concurrence from the 242-A qualified Shift Manager. 242-A qualified NCOs and Stationary Operating Engineers (SOE) that are controlling organization LOTO qualified will install LOTOs in the Evaporator. The LOTO records and equipment for the 242-A facility will be maintained in the 242-A Shift Office.

**Logbooks:** During OPERATION MODE, the 242-A Shift Manager’s Logbook will be maintained as “continuous use.” During SHUTDOWN MODE, the 242-A Shift Manager’s Logbook may be maintained as “continuous use,” or “intermittent use,” as determined appropriate by the AW/242-A/AP Area Manager.

**Minimum Shift Complement – 242-A Evaporator:** Management of the 242-A Evaporator and Tank Farm facilities minimum shift operations complement will be performed in accordance with the applicable facility TSR requirements and TFC-PLN-05, “Conduct of Operations Implementation Plan.” 242-A Evaporator minimum shift complement is determined by 242-A Evaporator MODE and is defined in HNF-15279, *Technical Safety Requirements for the 242-A Evaporator*, Administrative Control AC 5.3.1, *Minimum Operations Shift Complement*. 
The subject AC allows for sharing of resources between 242-A Evaporator and the Tank Farm facilities in SHUTDOWN Mode provided facility- or operation-specific training has been received.

The subject AC limits the sharing of resources when in the 242-A Evaporator is in OPERATION Mode. In OPERATION Mode, the Control Room (A-1) operator must be continuously present in the Evaporator facility and may not be shared; however, the Backside (A-2) operator may be shared with Tank Farms and is not required to be continuously at the Evaporator facility. In OPERATION MODE, the 242-A qualified shift manager: 1) is not required to be continuously at the 242-A Evaporator facility; 2) is not shared when FEED/SLURRY is in the C-A-1 vessel or recirculation loop; and, 3) may be shared when FEED/SLURRY is not present in the C-A-1 vessel or recirculation loop.

Base Operations Central Shift Operations is responsible for ensuring minimum shift complement is maintained.

Minimum Shift Complement – Tank Farms: Management of the 242-A Evaporator and Tank Farm facilities minimum shift operations complement will be performed in accordance with the applicable facility TSR requirements and TFC-PLN-05, “Conduct of Operations Implementation Plan.” Tank Farm minimum shift complement is defined by HNF-SD-WM-TSR-006, Tank Farms Technical Safety Requirements, Administrative Control AC 5.5.1.3, Minimum Operations Shift Complement, Table 5.5-1, Tank Farm Facilities Minimum Operations Shift Complement.

The subject AC allows for limited sharing of resources between the Tank Farm and 242-A Evaporator facilities based on 242-A Evaporator Mode and presence of FEED/SLURRY in the C-A-1 vessel or recirculation loop. One (1) NCO, restricted to the 242-A Backside (A-2) Operator when the 242-A Evaporator is in OPERATION Mode, is allowed to be shared with the 242-A Evaporator provided facility- or operation-specific training has been received. The Tank Farm Shift Manager is allowed to be shared with the 242-A Evaporator, EXCEPT when there is FEED/SLURRY in the C-A-1 vessel or recirculation loop, provided facility- or operation-specific training has been received.

Base Operations Central Shift Operations is responsible for ensuring minimum shift complement is maintained.

MODE Changes – 242-A: The 242-A Evaporator DSA establishes 2 facility MODES: MODE 1 – OPERATION; and, MODE 2 – SHUTDOWN. Only 242-A qualified Shift Managers can change or authorize MODE changes. MODE changes will be documented as required by WMP-242, Section 2.03, “(242-A Evaporator) Technical Safety Requirement Tracking,” in Operations Logs, Shift Turnover Sheets and in 242-A Operator Rounds.

Notifications: Base Operations Central Shift Operations will continue to be the single-point for reporting occurrences and abnormal events. A 242-A qualified Shift Manager will act as Subject Matter Expert (SME) when required for 242-A events.

Operator Aids: A 242-A qualified Shift Manager will issue and audit operator aids within the 242-A facility.
**Process Control Plans/Memos:** A 242-A qualified Shift Manager will approve and close out process control plans/memos applicable to the 242-A Evaporator.

**Record Material to Technical Data Service Center (TDSC):** 242-A personnel will supply 242-A record materials generated by procedures and activities to the Base Operations Central Shift Operations Clerk for disposition in accordance with approved Record Inventory Disposition Schedules.

**Red Arrows and Action Tracking Binders (ATB):** For issues relating to 242-A alone, the 242-A qualified Shift Manager will make red arrow entries in the 242-A operating log while the log is maintained as “continuous use,” and notify Base Operations Central Shift Operations. If an issue affects Tank Farms and 242-A, or extends beyond the time the 242-A log is maintained as “continuous use,” the red arrow or ATB item will reside in the Base Operations Central Shift Operations continuous operating log or ATB.

**Routing Board:** Any jumper configuration changes in the 242-A Pump Room will be documented on the Tank Farms Routing Board.

**Safety Bases & Safety Base Interfaces:** The 242-A Evaporator AC 5.6.1.8, require interfaces between the Tank Farms and 242-A Evaporator to be managed to ensure compliance with each facilities TSRs. Routine, rigorous and effective communication is required to ensure programs, specifications, procedures and work instructions and practices affecting the points of interface are adequate for the safe operation of both Tank Farm and 242-A Evaporator facilities.

Consistent with the requirements of the Tank Farms Authorization Basis and the 242-A Evaporator Authorization Basis, Base Operations Area and the Central Shift Operations Managers will actively manage activities affecting facility safety basis interfaces, including ensuring Unreviewed Safety Question (USQ) Evaluations are performed to both Authorization Bases.

There is no safety class equipment credited in the 242-A Evaporator DSA. The 242-A Evaporator DSA credits two (2) design features. The 242-A Evaporator facility pump room and evaporator room floors, walls and cover-blocks are credited as a Design Feature, and the TK-C-100 Steam Vent Line (Line V-1209) is identified as an important attribute. Control of vehicle access around and into the 242-A Evaporator facility is required as a defense in depth measure. The critical characteristics of the Design Features are protected through configuration management, evaluation of changes using the USQ process, and implementation of approved transportation safety procedures.

242-A Evaporator pressure relief valve, PSV-PB2-1, and the associated inlet and discharge piping system components starting at the connection to the pump P-B-2 discharge line to the pump room sump, are required to protect downstream Tank Farm safety significant components; waste transfer primary piping systems and isolation valves for double valve isolation, from overpressure. These components at the 242-A Evaporator are designated as Tank Farm safety significant and protected through configuration management, evaluation of changes using the USQ process, and transfer and operating procedures.
The Tank Farms Documented Safety Analysis (RPP-13033) requires defense-in-depth (DID) protection against a water hammer at the 242-A Evaporator that could damage tank farm safety-significant waste transfer primary piping systems, isolation valves for double valve isolation, or pressure relief valve PSV-PB2-1. The objective of the Tank Farm DID control is to “…provide an open flow path and/or control raw water flow with a manual valve.” The required controls are defined in OSD-T-151-00012, Operating Specifications for the 242-A Evaporator Crystallizer (242-A), Section 2.6, “242-A Water Hammer Protection.”

Examples of interfaces that must be effectively managed include, *but may not be limited to*:

- **Tank Farm DSA and TSR**
  - AC 5.5, Organization
  - AC 5.6, Safety Management Programs
  - AC 5.7, Waste Leak Evaluation Program
  - AC 5.8, Specific Administrative Controls (SAC)
    - 5.8.1, DST Induced Gas release Event Evaluation
    - 5.8.4, Low level Radioactive, Mixed, and TRU waste Packaging Flammable Gas Control
    - 5.8.5, Waste Transfer System Overpressure Protection
    - 5.8.6, Double Valve Isolation
    - 5.8.7, Service Water Pressure Detection and Waste Transfer Pump Shutdown
  - AC 5.9 Administrative Control Key Elements
    - 5.9.1, DST and SST Time to Lower Flammability limit
    - 5.9.3, Waste Transfer-Associated Structure Cover Installation and Door Closure
    - 5.9.4, Waste Characteristic Controls
    - 5.9.5, Nuclear Criticality Safety

- **242-A Evaporator DSA and TSR**
  - TSR, Section 2.1 - MODES
  - AC 5.3.1, Minimum Operations Shift Complement
  - AC 5.6.1.1, Restriction on 242-A Pump Room and Evaporator Room Access
  - AC 5.6.1.3, Source Strength Control (Radioactive Inventory Control)
  - AC 5.6.1.5, Nuclear Criticality Safety
  - AC 5.6.1.6, Evaporator Feed Verification
  - AC 5.6.1.8, TSR Interfaces with Other Facilities
  - AC 5.6.1.9, C-A-1 Time to Lower Flammability Limit Determination
  - AC 5.7, Reporting Requirements
  - AC 5.8, Staff Qualifications and Training

**Shift Instructions:** The AW/242-A/AP Day Shift Manager or a designated 242-A qualified Shift Manager will provide input into the Base Operations Shift Instructions by 1600 hours each day. The Base Operations Central Shift Operations Manager will incorporate the input as appropriate.

**Shift Office Status Boards (SOSB):** A 242-A qualified Shift Manager will manage the updates of the SOSB for the 242-A facility. 242-A actions will be placed on the SOSB “Actions” screens and managed by a 242-A qualified Shift Manager.
Shift Turnover: Shift turnovers will be conducted in accordance with procedure TFC-OPS-OPER-C-07, “Turnover of Shift Responsibility,” for both Tank Farm and 242-A facilities. Any restrictions to operations such as SAC, LCO, AC, environmental surveillances, modes and maintenance shall be discussed.

SOE Support to 242-A: Base Operations Central Shift Operations will provide SOE support to perform required 242-A surveillances. A 242-A qualified Shift Manager will review the surveillances.

Status Seals: A 242-A qualified Shift Manager will manage, and audit status seals associated with 242-A Evaporator operations. (Reference WMP-242, Section 2.01, “Component Status Seals/Administrative Locks.”)

Surveillance & Rounds: 242-A qualified NCOs will perform control room (A-1) and backside (A-2) rounds at 242-A. Qualified SOEs will perform power operator rounds. During evaporator campaigns, Base Operations Central Shift Operations, Area and/or Waste Transfer managers will provide an NCO to perform required alarm monitoring, and level and temperature surveillances to support transfer activities.

Temporary Labeling: A 242-A qualified Shift Manager will issue, and audit temporary labels within the 242-A facility.

Transport of First Aid Cases: A 242-A qualified Shift Manager must remain on-site (200E area) to meet minimum shift complement requirements while another management team member transports the injured person.

Unreviewed Safety Questions: USQ screenings and determinations for 242-A Evaporator applications will be performed by personnel who are qualified USQ Evaluators and who have been trained on both the 242-A and Tank Farm Safety Bases.

Work Validation & Prioritization: A 242-A qualified Shift Manager will review, validate and prioritize 242-A Evaporator work requests. A copy of the validated work package will be provided for daily review. Validated work package numbers, descriptions and priorities will be communicated to the AW/242-A/AP Team Maintenance Manager, and to the responsible planner and scheduler for inclusion on the Integrated Mission Execution Schedule (IMES).

Work Release: A 242-A qualified Shift Manager will release work within 242-A. The 242-A qualified Shift Manager will provide timely feedback to Base Operations Central Shift Operations and Area Managers on any interface issues.
MOU: Interface Between the 242-A Evaporator and Tank Farm Facilities

Approved: [Signature] 7/12/10
Brian A. Von Bargen, Manager
AW/242-A/AP Area Operations

Approved: [Signature] 7/14/10
Dave R. Moser, Manager
Shift Operations

Approved: [Signature] 7/13/10
Tommy R. Reynolds, Manager
Base Operations