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Mr. Allen Schubert
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PPPO-02-4694165-18

Dear Mr. Schubert:

**CONTRACT NO. DE-EM0004895: APPROVAL OF DELIVERABLE NO. 148,
SURVEILLANCE AND MAINTENANCE PROGRAM PLAN, CP2-SM-0001/FR1**

Reference: Letter from W. Kirby to M. Fultz, "Four Rivers Nuclear Partnership, LLC, Deliverable No. 148—Response to the U.S. Department of Energy Comments on the Surveillance and Maintenance Program Plan, CP2-SM-0001 FR1," (FRNP-18-0500), dated February 14, 2018

The U.S. Department of Energy has reviewed and hereby approves the Four Rivers Nuclear Partnership, LLC Deliverable No. 148, Surveillance and Maintenance Program Plan, CP2-SM-0001/FR1.

If you have any questions or require additional information, please contact Tracey Duncan at (270) 441-6862.

Sincerely,

Marcia D. Fultz
Contracting Officer
Portsmouth/Paducah Project Office

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CP2-SM-0001/FR1A

**Surveillance and Maintenance Program Plan
Four Rivers Nuclear Partnership, LLC,
Paducah Deactivation and Remediation Project**



This document is approved for public release per review by:

David Hayden
FRNP Classification Support

2-14-18
Date

**Surveillance and Maintenance Program Plan
Four Rivers Nuclear Partnership, LLC,
Paducah Deactivation and Remediation Project**

Date Issued—April 2021

U.S. DEPARTMENT OF ENERGY
Office of Environmental Management

Prepared by
FOUR RIVERS NUCLEAR PARTNERSHIP, LLC,
managing the
Deactivation and Remediation Project at the
Paducah Gaseous Diffusion Plant
under Contract DE-EM0004895

APPROVALS

**Surveillance and Maintenance Program Plan
Four Rivers Nuclear Partnership, LLC,
Paducah Deactivation and Remediation Project**

CP2-SM-0001/FR1A

April 26, 2021

Matt Oliver

Matt Oliver
Surveillance and Maintenance Manager

4/26/21

Date

REVISION LOG

Revision Number	Revision Date	Description of Changes	Pages Affected
0		Initial Issue	All
FR1	2-14-2018	Updated.	All
FR1A	4-26-2021	Non-intent change to correct Approver, Functional Area, and updated Required Review Date.	All

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ACRONYMS

CAAS	Criticality Accident Alarm System
CFR	<i>Code of Federal Regulations</i>
CM	corrective maintenance
CMMS	computerized maintenance management system
D&R	deactivation and remediation
DOE	U.S. Department of Energy
DSA	Documented Safety Analysis
FIMS	Facilities Information Management System
FM	facility manager
KDEP	Kentucky Department for Environmental Protection
KPDES	Kentucky Pollutant Discharge Elimination System
PdM	predictive maintenance
PGDP	Paducah Gaseous Diffusion Plant
PM	preventive maintenance
PMR	preventive maintenance request/revision
RCRA	Resource Conservation and Recovery Act
S&M	surveillance and maintenance
S&MPP	Surveillance and Maintenance Program Plan
SSC	structure, system, and component

1. BACKGROUND AND INTRODUCTION

The U.S. Department of Energy (DOE) Portsmouth/Paducah Project Office has contracted Four Rivers Nuclear Partnership, LLC, as the prime Paducah Gaseous Diffusion Plant (PGDP) Deactivation and Remediation (D&R) Contractor. PGDP is located in McCracken County, Kentucky. A description of PGDP and its environs is provided in CP1-NS-3000, *Documented Safety Analysis* (DSA). The D&R Contractor scope of work includes performance and coordination of the site limited operations, surveillance and maintenance (S&M), deactivation, and environmental remediation. The D&R Contractor follows the applicable requirements of DOE and other regulations, including DOE Orders (O), to manage PGDP facilities and operations to allow for the safe and efficient performance of the mission.

This S&M Program Plan (S&MPP) describes the S&M that will be implemented by the D&R Contractor for transition of facilities and associated structures, systems, and components (SSCs) from their current state through disposition. The primary goal of this S&MPP is to maintain, effectively and with minimal cost, stable and known conditions; mitigate hazards; and minimize risks to PGDP facilities and systems from the point they are transitioned to the D&R Contractor until they are dispositioned. In many instances, after a facility has been through deactivation or demolition, new S&M activities may occur at a facility's location, such as maintaining institutional controls and protective barriers to the ground (e.g., surface coatings on concrete slabs).

Surveillance activities generally consist of scheduled, periodic inspection of a facility or SSC as required by federal and state environmental, safety, and health laws and regulations and by DOE Orders. The purpose of surveillance is to demonstrate compliance, identify problems requiring corrective action, and determine the facility's present environmental, radiological, and physical condition. More specifically, surveillance includes activities to be performed to determine the operability of critical SSCs, monitor radiological conditions, check safety-related items, provide for facility security controls, and assess facility structural integrity.

Maintenance activities include sustaining property in a suitable condition for its intended or designated purpose. Types of maintenance generally fall into two categories: (1) periodic and (2) corrective. Both types will be employed for the D&R Contractor. The periodic types are preventative maintenance, and to a much lesser degree, predictive maintenance (PdM). Corrective maintenance includes activities such as repairs and alignments that are performed when equipment fails or does not perform its intended purpose.

The S&M activities are tailored to comply with DOE O 430.1B, Chg 2, Real Property Asset Management, and 10 *CFR* Part 851, *Worker Safety and Health Program*. For all of these activities, the D&R Contractor shall maximize use of recycling excess materials and equipment to reduce project costs in accordance with DOE O 436.1, *Departmental Sustainability*.

In addition, a significant part of the D&R Contractor's mission is to direct and/or perform the maintenance activities required to meet the D&R Contractor requirements established in DOE O 433.1B, *Maintenance Management Program for DOE Nuclear Facilities*, for the management and conduct of cost-effective facility maintenance activities of the D&R Contractor-managed nuclear facilities (Nuclear Hazard Category 2 and 3) at PGDP. A separate plan, CP2-SM-0018, *Nuclear Maintenance Management Program*, incorporates the requirements of DOE O 433.1B for those maintenance processes required to ensure that SSCs are capable of fulfilling their intended function as identified in the facility safety basis (e.g., DSA).

The program described herein applies to the D&R Contractor, subcontractors, and vendors who are responsible for planning, managing, and conducting maintenance activities for these facilities. The program

requirements are applied to a specific facility or activity on a “graded approach,” which is defined as the process of ensuring that actions used to comply with a requirement are commensurate with the following:

- The relative importance of safety and safeguards and security;
- The magnitude of any hazard(s) involved;
- The life cycle stage of the facility;
- The programmatic mission of the facility;
- The particular characteristics of the facility;
- The relative importance of the radiological and nonradiological hazards; and
- Any other relevant factor.

Implementation of S&M work scope, as defined in this plan, will be carried out through use of Integrated Safety Management-compliant work procedures and/or work packages developed and approved in accordance with procedure development and control process, procedure use process, and D&R Contractor work controls program. The D&R Contractor will use a computerized maintenance management system (CMMS) to integrate historical S&M data with work requests for subsequent scheduling.

2. SCOPE

The D&R Contractor will conduct preventive and corrective maintenance (CM) using a graded approach on buildings, trailers and other structures and facilities for which the D&R Contractor is assigned responsibility in the Facilities Information Management System (FIMS). This does not include maintenance activities required to implement the requirements of DOE O 433.1B. Those activities are defined in CP2-SM-0018.

The following are S&M activities that the D&R Contractor will perform.

- (1) Minimize and reduce the occupation of facilities to the maximum extent possible;
- (2) Perform minimally required facility inspections including equipment and/or structure; and
- (3) Conduct preventive, predictive, and CM actions only necessary to support D&R Contractor or site tenants'/contractors' missions and operations. As operational activities change, the D&R Contractor shall assess annually to determine if, and to what degree, continued preventative, predictive, and CM still is warranted.

ROUTINE DELIVERABLES

The S&M Group will submit the following two deliverables annually:

- (1) The Roof Structural Integrity Assessment
- (2) The Annual Site Facility Occupational Status Report

3. PROGRAM ORGANIZATION

The S&M organization is the functional responsibility of the D&R Contractor S&M Manager, reporting to the Site Operations Director as part of the PGDP Stabilization and Deactivation directorate management team. There are multiple S&M supervisors who are responsible for the execution of maintenance for D&R Contractor facilities and associated project systems and equipment.

Facility managers (FMs) are assigned to each PGDP D&R Contractor-managed DOE facility. FMs are responsible for operability of equipment assigned to their facility, consistent with the operating specifications and safety requirements associated with the equipment and for requesting repairs should equipment fail or be identified as defective.

All work controls associated with S&M activities are managed through the D&R Contractor Work Control Program, as defined in document CP2-SM-1000, *Activity Level Work Planning and Control Program*.

All individuals who manage, perform, or facilitate maintenance activities must be trained and possess competence commensurate with their responsibilities. Training requirements for each position in the organization are developed and maintained in accordance with CP2-TR-0100, *Training Program*.

4. FACILITY SUPPORT

A variety of site systems and utilities will remain fully or partially active during the conduct of S&M. The following include, but are not limited to, the major site systems and utilities that may require interfaces with other D&R Contractor organizations or other DOE Contractors and will be available to support or enable S&M activities to be conducted. Only operational systems will be maintained.

- Fire Protection and Detection Systems—Some assigned facilities have sprinkler systems, smoke and heat detectors, and alarms. The sprinkler systems are supported by either the high pressure firewater system or the low-pressure potable water and firewater system. The site fire station and supporting capabilities will remain available, as required, during S&M activities.
- Dry-Gas/Nitrogen Buffer System(s)—The dry-gas/nitrogen buffer system(s) maintains positive pressure on enrichment-related equipment and prevents wet air from leaking into the equipment. Note: The nitrogen buffer system may be used on a case by case basis. It is not a ready option.
- Physical Security—Physical security includes fences, electronic access controls, surveillance systems, guarded portals, and a dedicated protective force.
- Alarm, Evacuation, and Notification System—The alarm and notification systems alert on-site personnel and the public in the event of an accident on-site. This system provides evacuation instructions or notification in the event of an incident that requires evacuation or sheltering in place.
- Power System—Electrical power is provided to site facilities through switchyard(s) and associated electrical equipment.
- Steam Generation and Distribution System—Steam, which is used primarily for building heating, is generated using package boilers located at the C-600 area.

Potable Water Supply and Sewage Systems—Site facilities and ongoing operations are provided potable water from the Water Treatment Plant (C-611) and sewage services from the Sewage Treatment Plant (C-615).

- Storm-Water Runoff System—This system collects and directs precipitation runoff to monitored outfalls prior to off-site discharge.
- Plant Air—The Plant air system is a source of compressed air for valve control, maintenance, and D&R activities.
- Recirculating Heat System—The Recirculating Heat System provides heated water, through the C-635-6 facility, to the heating, ventilation, and air conditioning systems at C-100, C-709, C-710, and C-720.

Note that not all of the major systems and utilities described above will serve every assigned facility in which S&M will be conducted.

5. FACILITY SURVEILLANCE

Scheduled periodic surveillance will be performed in/on assigned facilities in order to maintain compliance with a variety of requirements, maintain stability of facilities/SSCs, identify any deficiencies, perform minor corrections, and initiate needed CM. Surveillance, when integrated with maintenance, will protect the health and safety of the site workforce, the public, and the environment and ensure that the facilities are maintained in a stable condition.

The facilities assigned to the D&R Contractor in FIMS will receive surveillance(s) in accordance with an existing schedule or other requirement. Surveillance types and frequencies will be tailored utilizing a graded approach based on facility status, mission, and importance and magnitude of the hazards associated with facilities and infrastructure.

The following are examples of routine surveillance activities (not an all-inclusive list) that D&R Contractor personnel will perform in and around assigned facilities at PGDP:

- Check condition of active exit lights and pull-box lights;
- Check operability of sump pumps;
- Check condition of building exterior walls, windows, doors, down spouts, and storm drains;
- Check stability of asbestos-containing materials and stored combustibles;
- Check condition of building roof(s) and roof vent covers;
- Inspect for water intrusion into radiological, fissile material, and other areas;
- Inspect integrity/condition of any containers with fissile material;
- Ensure that nuclear criticality safety spacing requirements remain uncompromised;

- Ensure that moderation control buffered systems fall within established parameters;
- Inspect polychlorinated biphenyl (PCB) drip collection system and other locations mandated by an Federal Facility Compliance Act Agreement;
- Inspect Resource Conservation and Recovery Act (RCRA) storage areas and the integrity/condition of any containers with waste material;
- Check facility housekeeping and walking path lighting;
- Check operability of pump-and-treat stations and air monitoring stations;
- Check unit battery rooms and battery operability; and
- Check the condition of fire protection systems.

Surveillance activities will be planned, tracked, and scheduled via a CMMS. The frequency of surveillance activities will be determined based on need and regulatory and contractual requirements. There may be surveillances that require skills not available from on-site resources. These types of surveillances will be planned and scheduled as nonroutine, specialized surveillances. Other nonroutine surveillances may be required in response to unanticipated or undesirable conditions in facilities.

Included in surveillance activities are performing condition assessments at least once every five-years on applicable real property assets. This condition assessment portion of surveillance shall use a graded approach based on facility status, mission, and importance and magnitude of the hazards associated with facilities and infrastructure.

6. FACILITY MAINTENANCE

Preventive and CM activities will be conducted in assigned facilities in order to meet the requirements identified through the graded approach. The level of both required preventative and CM will be determined based on the facility's purpose/mission, as described in Table 1. Due to the current or expected out-of-service status of much of the equipment in assigned facilities and the scope of the overall D&R effort, there likely will be no or very minimal predictive maintenance performed. Additionally, the D&R contractor will evaluate PMs, as necessary, to determine whether their continued performance is necessary and of value to the government utilizing the preventive maintenance request/revision (PMR) process.

The facilities under the control of the D&R contractor are identified in FIMS. Each real property asset identified in FIMS includes the category, estimated disposition year, mission dependency, and mission/usage for each facility. This information is maintained to provide real time information and reporting.

Table 1. Standard Maintenance Requirements by Facility Type

Facility Type/Category	Maintenance Objectives	Implementation Method
Administrative Buildings (e.g., C-304)	Maintain utilities and support areas through CMs when necessary for mission success.	CM
Power and Utilities Facilities (e.g., C-611)	Maintain in-use/needed power and utility systems in a fully operational state through PdMs, PMs and CMs. Maintain utilities and support areas through CMs when necessary for mission success. Perform surveillances of the HPFW system.	PM, CM
Trailers (e.g., C-412 Complex)	Maintain utilities and support areas through CMs when necessary for mission success.	CM
Treatment Facilities (e.g., C-615, C-617)	Maintain in-use/needed facilities in a fully operational status. Maintain utilities and support areas through CMs when necessary for mission success.	PM, CM
Process Buildings (e.g., C-333, C-337)	Maintain fully operational nonnuclear safety SSCs through PMs and CMs. Maintain structural integrity through surveillances and CMs. Maintain utilities and support areas through CMs when necessary for mission success.	PM, CM, Surveillance
Unoccupied Facilities (e.g. C-720-H)	Perform periodic inspections to identify safety issues within the facilities. Discovered safety issues will be corrected through CMs.	CM

These preventative maintenance requirements may be modified on the basis of evaluations of current facility conditions as well as a consideration of the desired facility conditions as a facility approaches D&R. Utilizing the PMR process, the D&R contractor will evaluate PMs in other facilities, as necessary, to determine whether their continued performance is necessary and of value to the government. Corrective maintenance activities will be conducted as needed based on facility surveillance reports or equipment inspections and problems/deficiencies identified by facility owners.

Preventive and CM will continue to follow the previous D&R Contractor's frequencies and scope, as long as these systems are required by the authorization safety basis and until changed through application of the graded approach. The scope and amount of maintenance will be commensurate with the needs of those facilities. Occupied and operating facilities will require the greatest amount of regular preventive and CM for both structural items and utilities. Nonstructural facilities (e.g., concrete pads) will require little to no maintenance support.

The following are examples of routine preventive maintenance activities (not an all-inclusive list) that the D&R Contractor personnel will perform in and around assigned facilities:

- Check and calibrate the CAAS clusters and moderation-control buffer systems (particularly for facilities addressed by CP2-SM-0018, *Nuclear Maintenance Management Plan*);
- Check facility structural components (e.g., siding, doors, windows, rain water control systems, roof);
- Roof systems;
- Lubricate equipment;
- Test building horns, alarms, and lights;

- Perform periodic inspections of cranes, doors, and elevators (when an operable system or needed to maintain a certification);
- Replace filters and belts in equipment;
- Conduct battery load testing;
- Check calibration and response of alarms;
- Check in-service groundwater pump-and-treat facilities and air/water monitoring stations; and
- Test equipment.

Measuring and test equipment that is used to perform preventive maintenance work is calibrated in accordance with approved procedures. Standards used to calibrate devices are certified and traceable to the National Institute of Standards and Technology, or the basis of calibration is documented if no national standards exist.

The frequency of preventive maintenance activities may range from monthly to several years. The longer duration frequencies will be adjusted as facilities move from stabilization to D&R. Corrective maintenance work will be identified as work requests are prepared. Maintenance activities, both preventive and corrective, will be prioritized, planned, tracked, and scheduled via a CMMS.

Included in maintenance activities is management of deferred maintenance. This includes providing deferred maintenance estimates based on nationally recognized cost estimating systems or the DOE Condition Assessment Information System.

7. FACILITY ROOFS

The D&R Contractor will ensure that all Category 2 nuclear facility roofs do not leak. If a leak is discovered, the D&R Contractor will take immediate mitigation action(s) and pursue full repair actions to ensure all temporary repair actions are replaced with permanent repair(s) within 60 days of leak identification. This includes any and all structural aspects of the roofs. Further, the D&R Contractor will ensure that roof leaks do not impact operational activities (defined as taking any type of action that adjusts the operation from pre-leak condition/configuration, including modifying operator personal protective equipment) in non-Category 2 nuclear facilities and shall permanently repair such leaks within 90 days of identification. Permanent repairs are defined as returning the roof to its original pre-leak configuration or equivalent.

Further, the roofs for C-310, C-310-A, C-331, C-333, C-335, and C-337 were replaced with a fire resistant structural membrane system. These roofs shall be maintained in a sound condition that does not invalidate the warranty of the roofs. In the event leaks are identified, the D&R Contractor shall work with the installer to resolve warranted deficiencies.

8. WASTE MANAGEMENT AND ENVIRONMENTAL COMPLIANCE

A number of federal and state regulatory agencies, including the U.S. Environmental Protection Agency, Kentucky Department for Environmental Protection (KDEP), and the DOE Authority Having Jurisdiction, enforce waste and environmental compliance regulations at the PGDP site. These agencies issue permits, review compliance reports, conduct joint monitoring programs, inspect facilities and operations, and oversee compliance with applicable regulations.

S&M activities will generate a wide range of waste materials (e.g., hazardous waste, radioactive waste, mixed waste, universal waste, PCB-contaminated waste) that are subject to a number of regulatory agency agreements (e.g., KDEP and Federal Facility Compliance Act agreements) and codified regulations (e.g., RCRA, Toxic Substances Control Act, U.S. Department of Transportation, Kentucky Administrative Regulations).

The S&M organization will coordinate with site Waste Management and Environmental Compliance personnel to maintain compliance with the applicable agreements, regulations, and site plans, such as CP2-WM-0001, *Waste Management Plan*, and CP2-ES-0103, *Environmental Radiation Protection Plan*. The areas in which this coordination will occur include waste acceptance, tracking, handling, storage, periodic inspections, characterization, packaging, transportation, reporting, and disposal.

The S&M organization will comply with all permit requirements and support site Environmental Compliance personnel on periodic monitoring and data reporting. As needed, S&M will maintain documentation related to the capture and loss estimates of ozone-depleting substances from cascade or other facility equipment. S&M personnel will maintain and repair equipment associated with ambient air monitoring. Monitoring of the assigned discharge points (outfalls) will be performed in order to ensure compliance with the KPDES permit. S&M personnel will maintain and repair equipment associated with monitoring stations at these outfalls.

9. QUALITY ASSURANCE

Activities performed by the S&M organization will be conducted in accordance with CP2-QA-1000, *Quality Assurance Program Description*.

10. RADIOLOGICAL CONTROLS

Activities performed by the S&M organization will be conducted in accordance with CP2-RP-0001, *Radiological Protection Program*, where applicable to the program.

11. HAZARDOUS MATERIAL INVENTORY, MANAGEMENT, AND PROTECTION

Personnel who conduct S&M activities in assigned facilities may encounter a wide variety of radioactive and hazardous materials known to exist at the PGDP site. Examples of these materials include uranium and

uranium compounds (e.g., uranium hexafluoride); technetium-99; radioactive calibration sources; nitric acid; sulfuric acid; sodium hydroxide; trichloroethene; beryllium; lead (e.g., sheets, bars, in paint chips); mercury containing items (e.g., fluorescent lamps, gauges, switches); PCBs (in ballasts, electrical transformers, and capacitors); methanol; antifreeze; gasoline; diesel fuel; asbestos-containing items (e.g., transite panels, insulation, floor tile, cable trays); oils (e.g., mineral oil, lubrication oil, crankcase oil); hydraulic fluid; refrigerants; compressed gases in cylinders (e.g., acetylene, propane, oxygen); hydrofluoric acid; fluorine; chlorine; chlorine trifluoride; and miscellaneous chemicals (e.g., lubricants, solvents, cleaning agents, pesticides, laboratory chemicals). These materials exist in solid, liquid, and gaseous forms or in a combination of these forms. Some of these materials have been collected and packaged and are awaiting disposition while other materials remain in equipment, piping, tanks, or by other devices within or adjacent to various facilities.

The materials listed above are found in facilities located throughout the PGDP site. Many of these materials likely are to be associated with facilities that are involved with some type of site process (e.g., enrichment, cleaning, treatment) or dedicated storage. The radioactive and hazardous materials may be found in process piping and equipment, in tanks (above and below grade), in pits or enclosures, in cylinders, in electrical equipment, or in some type of waste/product storage container. In many cases, equipment located in site facilities is contaminated with one or more of the radioactive and hazardous materials listed above.

The radioactive and hazardous materials (both type and quantity) associated with specific assigned facilities are managed and tracked by a number of site support groups including Waste Management, Nuclear Material Control and Accountability, and Environmental Compliance. Due to the dynamic nature of the movement, storage, and disposition of these materials at PGDP site, no attempt has been made here to identify the current inventory and facility location of the radioactive and hazardous materials.

The protection of site workers from the hazards posed by radioactive and hazardous materials is maintained through a comprehensive system of safety management programs, associated protective equipment, and administrative and engineering controls. Safety programs that are used include Radiation Protection, Nuclear Criticality Safety, Occupational Safety, Industrial Hygiene, Respiratory Protection, Training and Qualification, and Emergency Preparedness. Overall hazardous material inventory is maintained through plan CP2-HS-2007, *Hazardous Chemical Management Program*.

12. TRAINING AND QUALIFICATION

Training for personnel who perform and/or support S&M activities at PGDP will be in accordance with CP2-TR-0100, *Training Program*.

13. HEALTH AND SAFETY

Health and safety controls for personnel who perform and/or support S&M activities at PGDP will be in accordance with CP2-HS-2000, *Worker Safety and Health Program*.

15. EMERGENCY PREPAREDNESS

Emergency preparedness for S&M activities will be in accordance with CP2-EP-1000, *Paducah Site Emergency Management Plan*.

16. SAFEGUARDS AND SECURITY

Safeguards and security measures are utilized to protect facilities and their contents from theft, diversion, unauthorized access, compromise of the site, or other acts that may adversely affect or pose hazards (physical or otherwise) to the safety or security of site personnel, the public, or to DOE interests. Safeguards and security interests at PGDP include a number of classified items: equipment and parts, computer systems, documents, waste, and special nuclear material. Additionally, government-owned personal property, unclassified sensitive information, unclassified controlled nuclear information, and official use only documents are located throughout the site.

The D&R Contractor will provide site physical security services (e.g., protective force operations, access and pedestrian/vehicle portal support) at the PGDP facility. The S&M organization will adhere to the safeguards and security plans and procedures, as applicable. In addition, the DOE Infrastructure Contractor provides site security management services (e.g., safeguards and security planning, access authorization, badging).

The D&R Contractor will work with the Infrastructure Contractor and DOE to explore opportunities to adjust safeguards and security measures for D&R Contractor-assigned facilities. The objectives of this effort will be to increase access flexibility, apply a more graded approach to security, reduce overall risks to classified and special nuclear material interests, and to reduce safeguards and security operating costs. Examples of potential changes that may be considered and evaluated include the following:

- Consolidation of site classified matter, nuclear materials, and special nuclear material in designated buildings or areas on-site;
- Relocation of perimeter security fencing, pedestrian/vehicles gates, barriers, and signs to create a smaller site security footprint;
- Installation of an automated access control system (e.g., a badge-reader system) and other means (e.g., door locks, intrusion alarms) to control and monitor personnel access to facilities or areas controlled by the D&R Contractor;
- Creation of smaller limited areas to minimize where security clearances are required for unescorted access; and
- Disposition of existing site safeguards and security interests (e.g., ship to another site, destroy by acceptable means).

Approval and implementation of some or all of these potential changes will allow security resources to focus on the most sensitive interests. This will allow the application of a graded approach to the protection strategy that is consistent with stabilization and deactivation needs, national security, and DOE's desired end state.

17. COST AND SCHEDULE

The Work Breakdown Structure for the overall PGDP D&R Project facility S&M is shown at the Control Account Summary level (EM.PA.0040.A008.41.DR).

The D&R Contractor will prepare a Performance Measurement Baseline that accounts for the period following transition until the end of fiscal year 2022. The Performance Measurement Baseline will include a schedule of S&M activities and related costs.