235-F Facility Deactivation Update – 2020 Work Plan Item

Recommendation 364 - Accelerate Deactivation and Decommissioning of 235-F

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Brief to SRS Citizen Advisory Board

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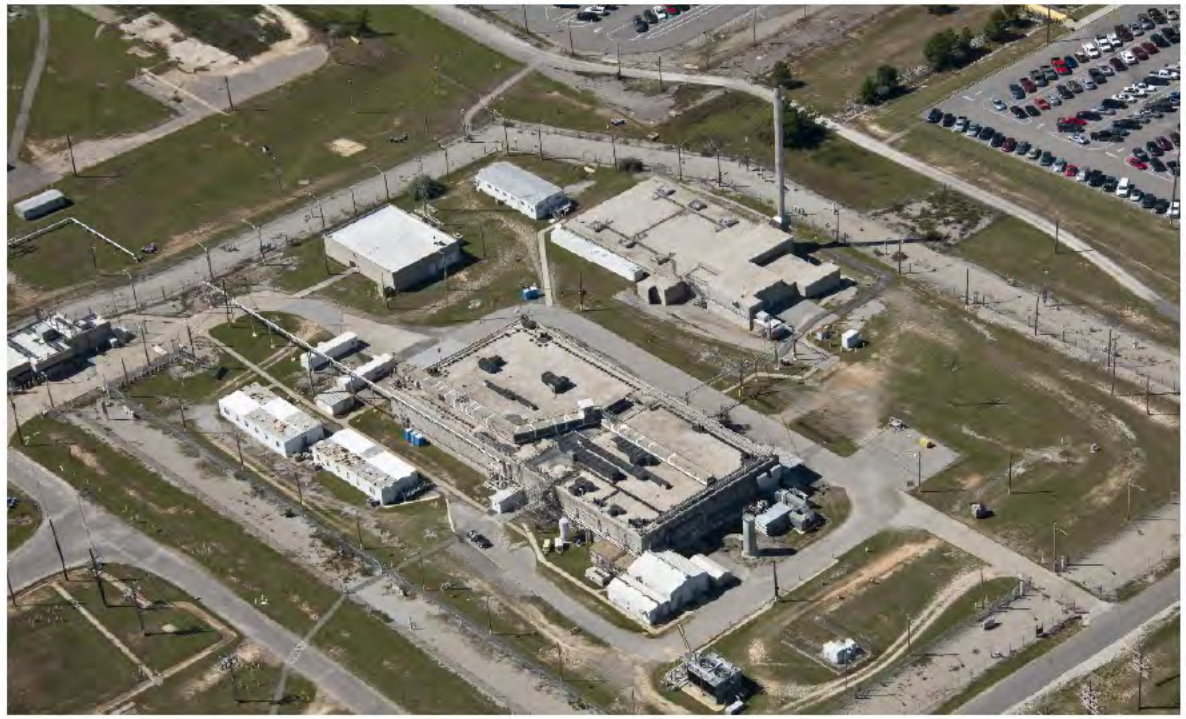
Purpose

1) Fulfill CAB 2020 Work Plan Item.
2) Provide an update on the actions taken by DOE in the past year.
3) Provide future activities regarding 235-F.

235-F Street View



235-F Arial View

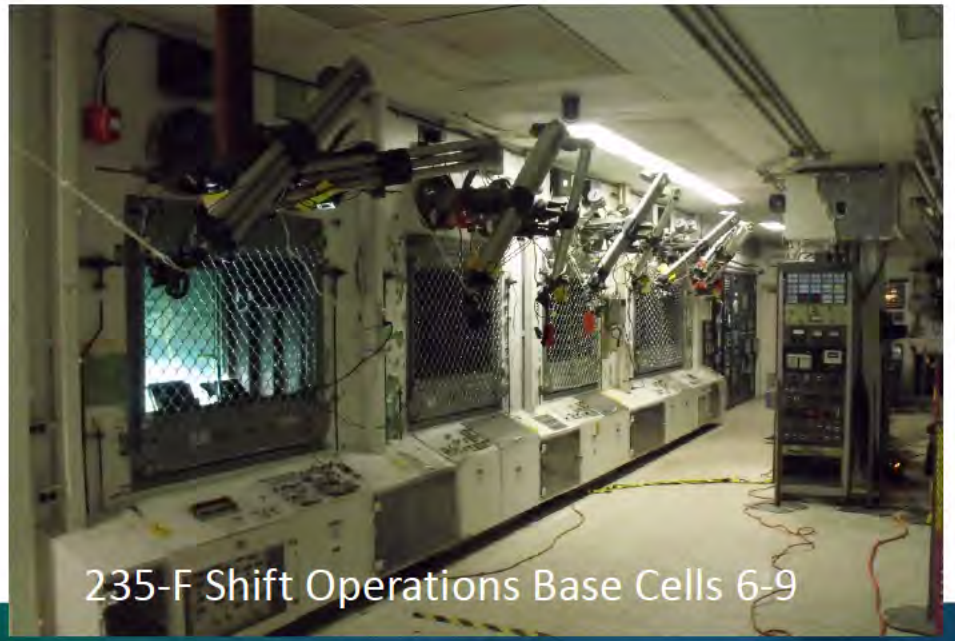
CAB Recommendation 364

1. Accelerate the timeline for decommissioning 235-F with a targeted completion date of 2026 and;
2. Initiate the preparation of required regulatory documents in parallel with the deactivation process.
   a) These documents may include the preparation of an Engineering Evaluation Cost Analysis (EECA), Remedial Investigations (RI) for Remedial Actions (RA), Interim ROD Feasibility Studies (FS) for decommissioning design, Interim ROD, Start Decommissioning Implementation plans, and budgets.
   b) Parallel preparation of the required regulatory documentation will help complete the decommissioning of the facility a number of years ahead of the proposed FFA schedule and offer what is considered the most cost-effective option.

235-F Facility Background

- **Constructed in 1954**
- **Last used in 1980's to produce fuel spheres and pellets out of Pu-238 to provide heat to electrically power long-term, deep-space missions, such as Galileo, Ulysses and Cassini.**
- **Defense Nuclear Facilities Safety Board (DNFSB) issued Recommendation 2012-1 for safety concerns in fall of 2012.**
  - DOE issued Recommendation Implementation Plan (IP).
- **Initiated risk reduction activities in FY2013.**
- **Major risk reduction activities included:**
  - electrically isolating circuits that were no longer needed,
  - removal of combustibles,
  - installation of a fire detection and alarm system,
  - removal of the material at risk (legacy Plutonium from the process areas).
- **Panel Briefs/Discussion with SRS CAB 2019.**
- **Issuance of SRS CAB Recommendation 364 in May 2019.**

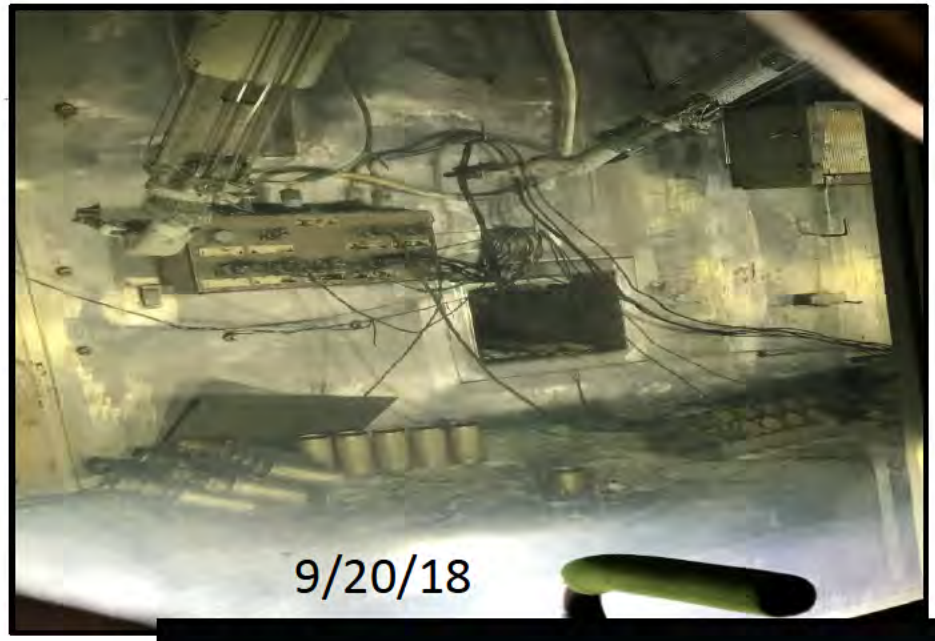
Early Construction Photo of 235-F

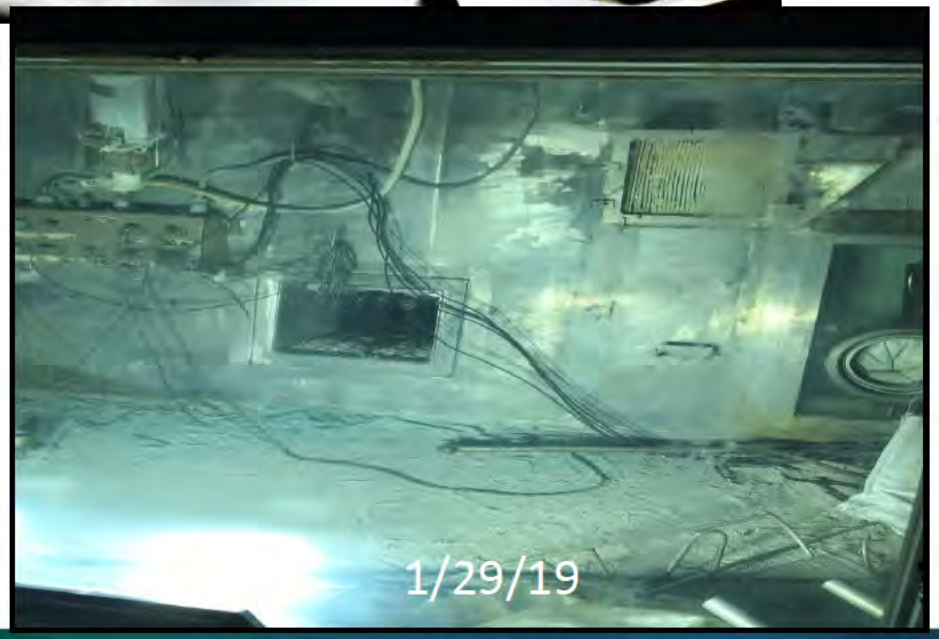


235-F Shift Operations Base Cells 6-9

Past Year (FY2019-FY2020) Actions for 235-F

- **Commenced Material at Risk (MAR) removal Pu-238 Oxide in May 2019**
  - Used common nuclear industry techniques for removal
  - Process required operators to be in multiple layers of protective clothing including air suppled suits
  - Majority of remaining material located in Cells 1&2 and wing cabinet
- **Conducted Surveys on remaining MAR**
  - Removal results showed less than 60% effectiveness
- **Revised DNFSB 2012-1 Recommendation Implementation Plan to address remaining MAR and to demonstrate worker safety**
- **Developed a Deactivation Plan for 235-F**
- **Completed the revised IP actions in May 2020**

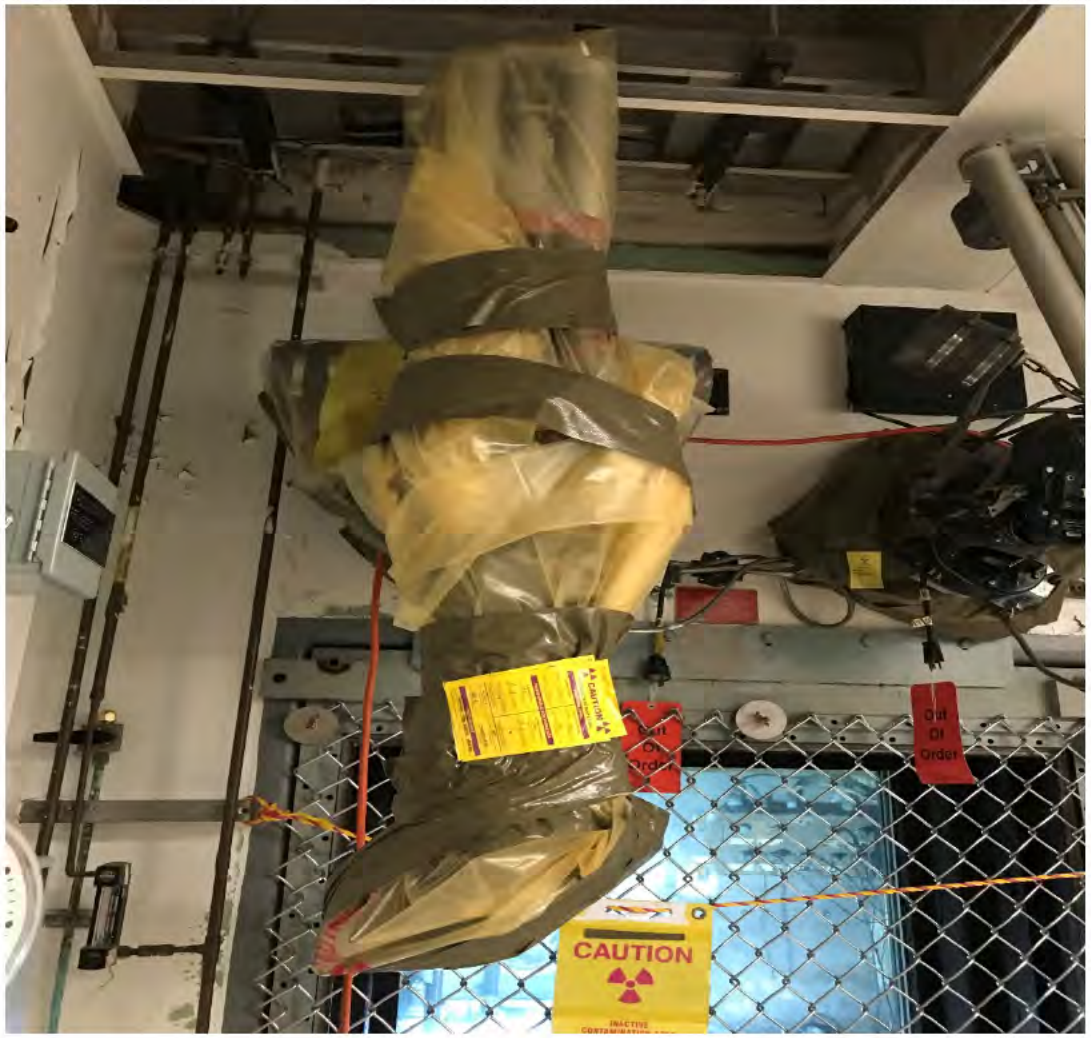




Before & after MAR removal of cell #1.

Future Activities for 235-F

- **Developing End State of facility with SCDHEC and EPA**
  - Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Process
  - Non Time Critical Removal Action
  - Discussions are ongoing with the Regulators to develop an Engineering Evaluation/Cost Analysis
  - Schedule for submittal to Regulators in fall 2021
- **Conducting Deactivation Activities**
  - Working Project in Three areas
    - *Ventilation Modifications*
    - *Isolation of services (electrical, steam, water etc.)*
    - *Removing or fixing contamination outside process areas*



Cell #1 Manipulator

Summary

- DOE has conducted eight years of risk reduction efforts for 235-F.
- Demonstrated worker safety.
- Initiated deactivation of 235-F Facility in FY2020.
- Following CERCLA process to reach facility End State.
- Continue to target early decommissioning.
- Will continue to keep CAB apprised of facility progress.