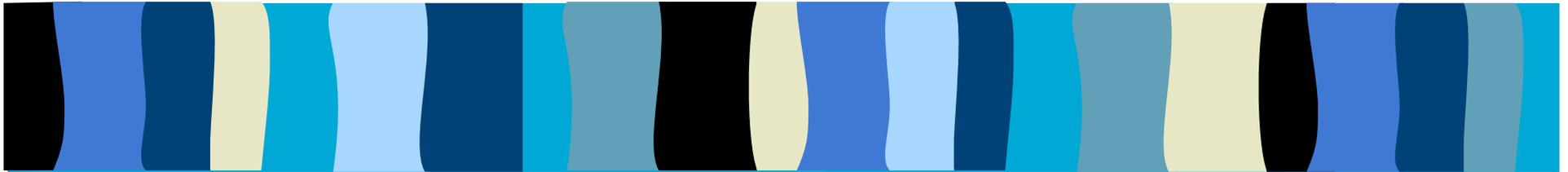


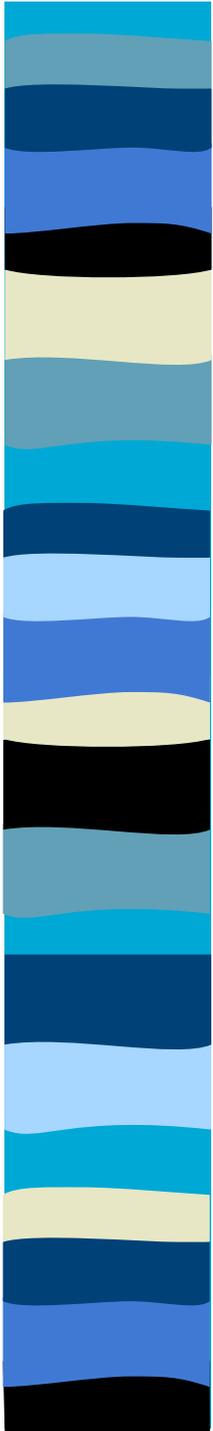
Fluor Fernald Lessons Learned



Process Improvements From Fernald
Remedial Projects

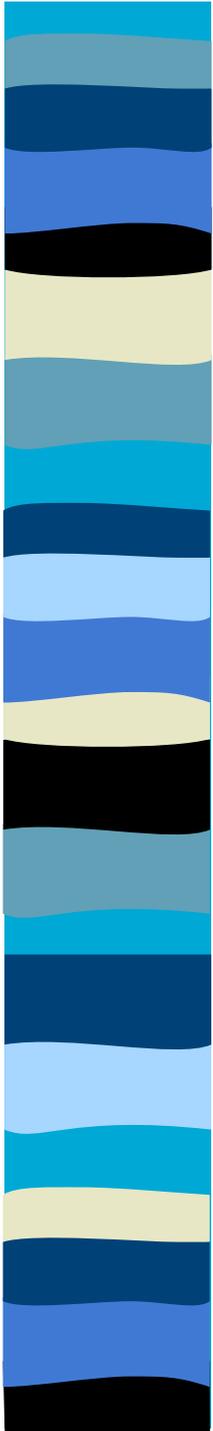
SELLS Spring Meeting

April 3 - 5, 2001



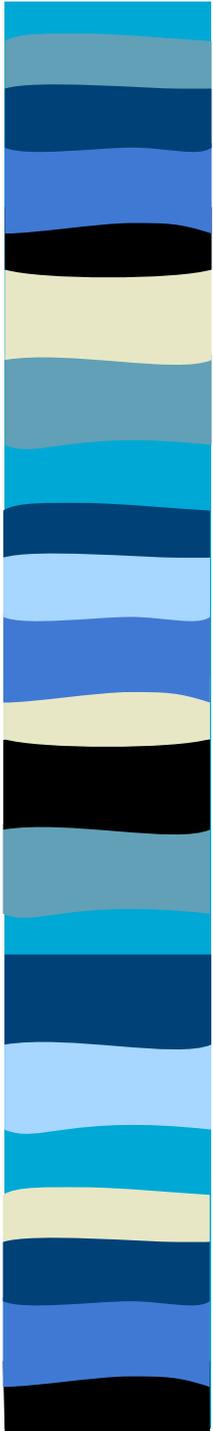
Project Overview

- The Waste Pits Project is part of Operable Unit 1 (One of five areas at Fernald requiring remediation).
- The 37-acre area includes:
 - Six waste pits
 - a Burn Pit
 - Clearwell
 - Miscellaneous structures, facilities and soil.



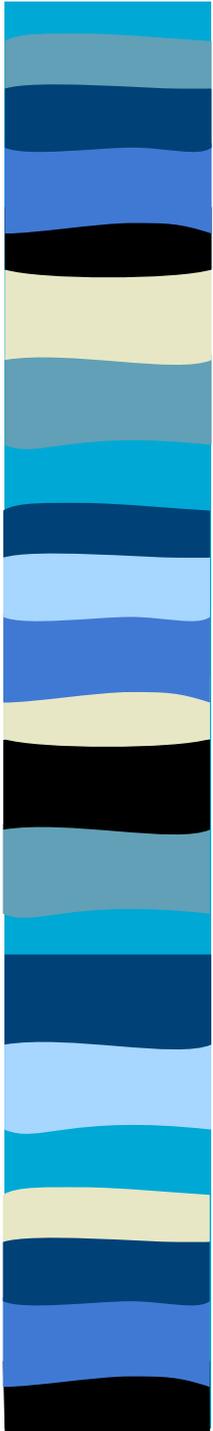
Project Overview

- The waste pit area contains approximately 1 million tons of low-level radioactive waste from Fernald's uranium production operation.
- Waste Pits - range from 1 to 5 acres; 10 to 40 feet deep.
- Contain 1 million tons of uranium, thorium, and other known and unknown contaminants.



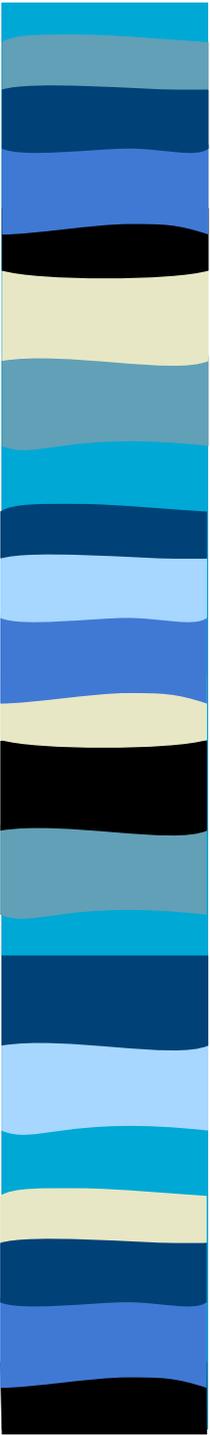
Project Overview

- The Waste Pits Project is scheduled to complete waste excavation, processing, and railcar loading operations in 2004, and decontamination and dismantlement of equipment and facilities in 2005.
- By the end of CY 2000, Fernald had shipped 32 trains of Waste Pit material offsite.



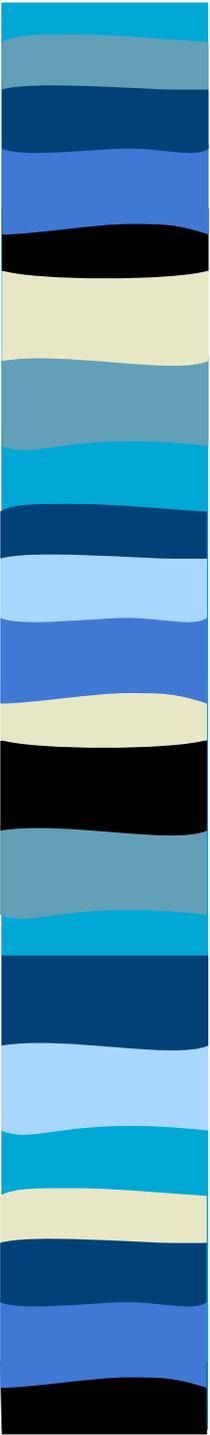
Project Overview

- In early 2000, the project experienced a number of deficiencies related to Conduct of Operations (CONOPS) and Radiological Work Processes.



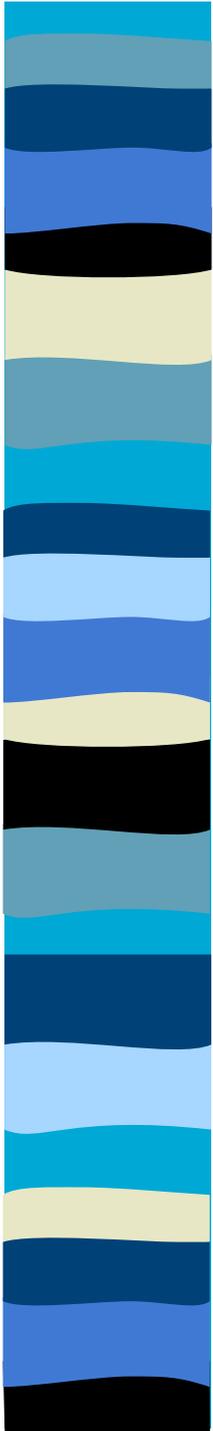
CONOPS Deficiencies

- After discovery of an energy isolation program violation during a safe condition check, workers did not correctly preserve the incident scene for investigation.
- Personal Injury at Material Handling Building, Pug Mill A. While cleaning Pug Mill A, a Chemical Operator received contusions and abrasions to his arm and leg due to the falling lid.



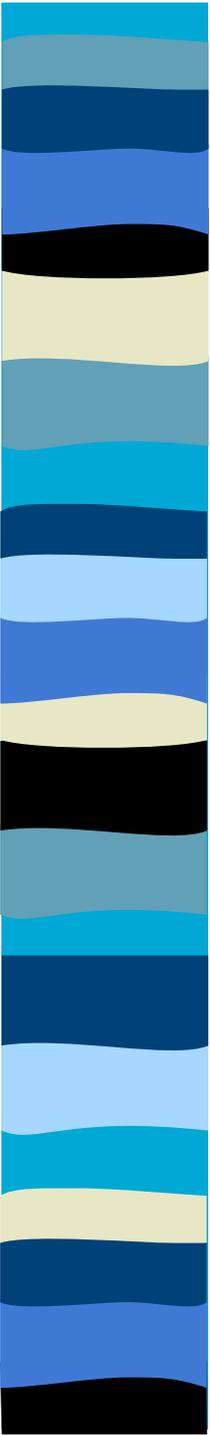
Radiological Control Deficiencies

- Spill of a radioactive calibration standard at the Waste Pits Project Lab, during preparation of standards for the calibration of gamma spectroscopy instruments.
- Unapproved respirator used by a subcontractor employee. A Subcontractor employee had entered into airborne radioactivity areas approximately 92 times between December 1999 and June 2000.



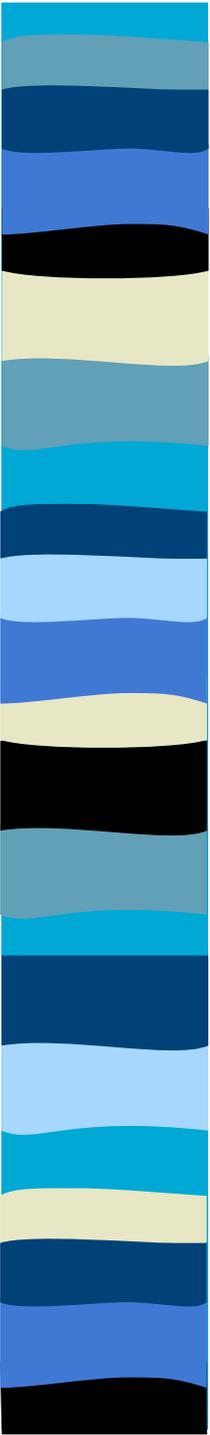
Results

- January - June 2000; Eight occurrences were related to Waste Pits Project operations.
- March 2000 - A temporary standdown of the Waste Pits Project was initiated.



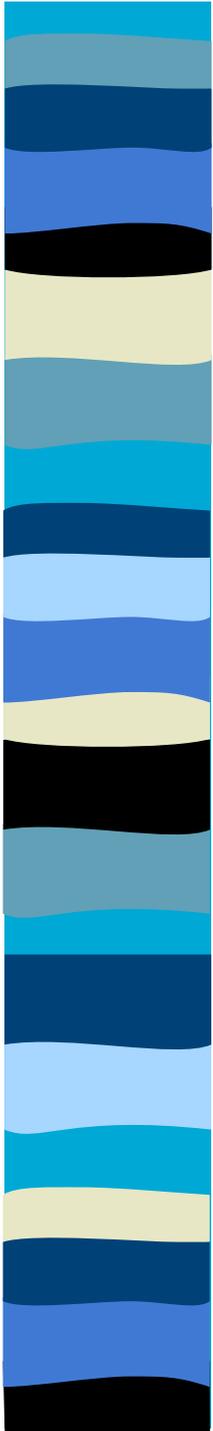
Problem Areas

- The Fluor labor workforce operated the thermal dryer plant under technical direction of the subcontractor; however, there were no project supervisors for the thermal dryer plant work processes.
- The integrated role of project radiological controls personnel was not fully defined in work control processes.
- Poor communication among Fluor Fernald and subcontractors.



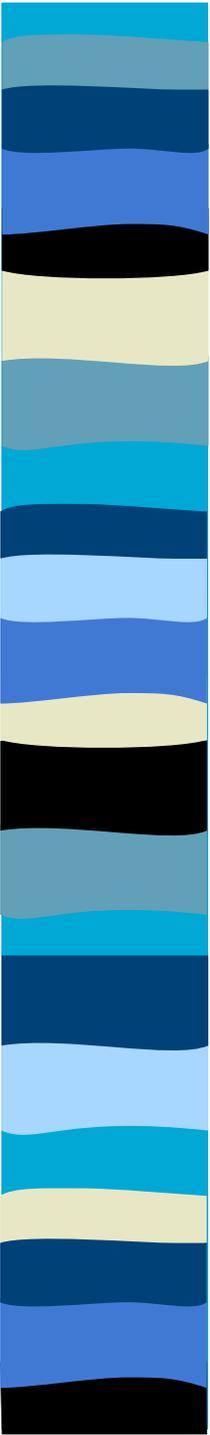
Problem Areas

- Procedural non-compliance.
- Policies and procedures for shift turnover, logkeeping, and equipment operation were not adequately defined, disseminated to operators, and enforced.
- Unknown factors were not properly addressed during project planning stages.



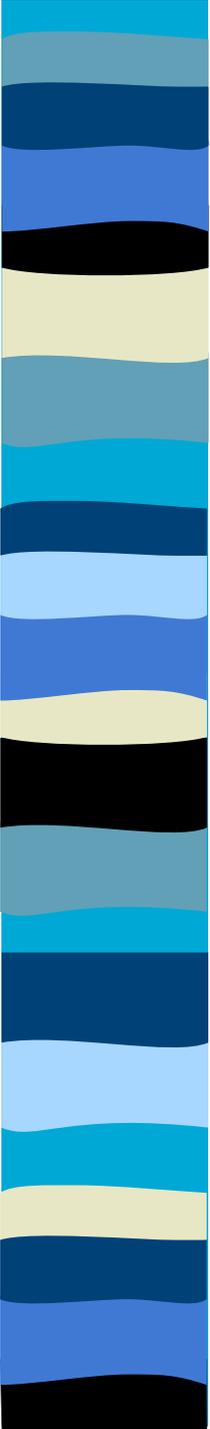
Problem Areas

- In total, these deficiencies represented a programmatic breakdown in the overall management of the Waste Pits Project.



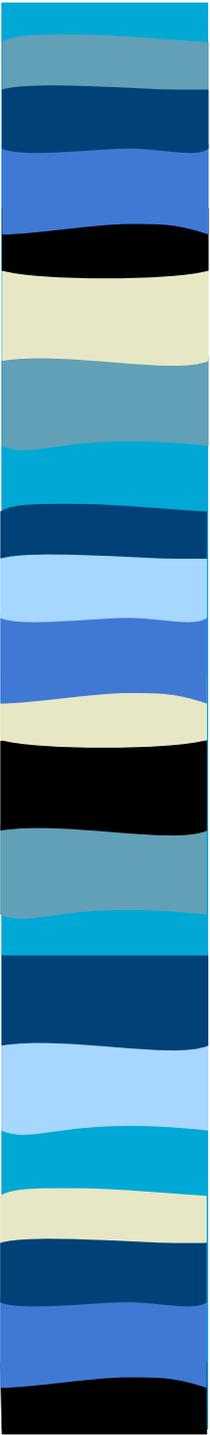
Process Improvements

- Project reorganization - to include project supervisors with clearly defined roles and responsibilities.
- Communication - developed formal mechanisms [shift turnover practices, pre-job briefings] for establishing and maintaining effective communication among managers, supervisors and workers from all involved organizations.



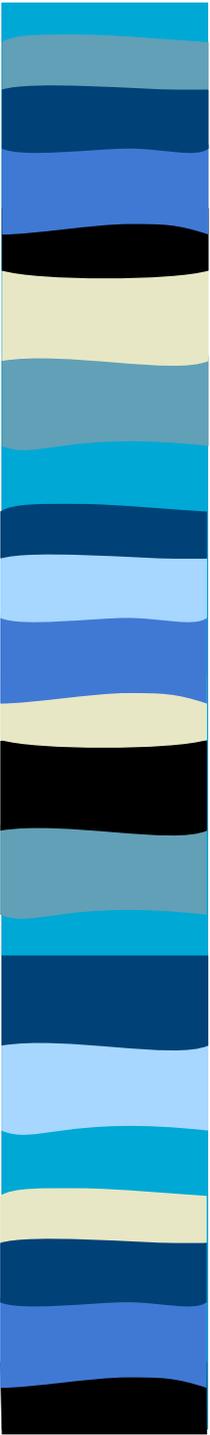
Process Improvements

- Radiological - organizational structure of the Project Radiological Control Group was modified through personnel reassignments, to provide more experienced leadership and technical support to the project.
- CONOPS - established an Operations Performance Task Team to focus on project resource requirements, and sitewide implementation of CONOPS standards.



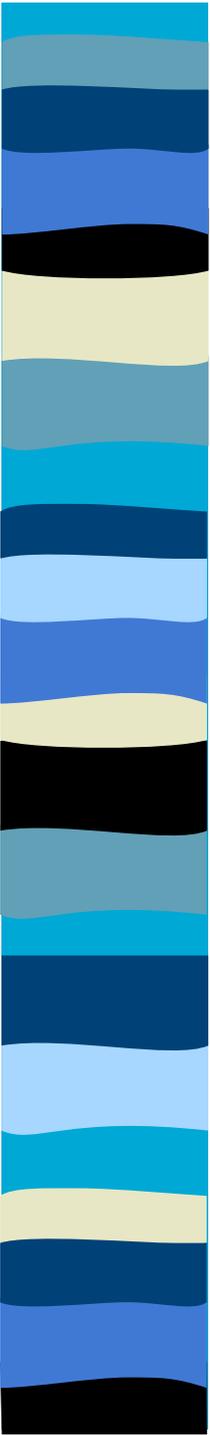
Process Improvements

- Lessons Learned - a video titled, “Operations Awareness” disseminated to all Fluor Fernald projects.
- Communicates the expectations for operational excellence and compliance with Conduct of Operations principles.



Conclusions

- As part of the oversight of large-scale subcontracted projects, such as Waste Pits Project, management must ensure that the CONOPS program adequately addresses the special situation of operating contractor owned facilities with the site workforce.



Conclusions

- Facility Managers and Supervisors must ensure that workers have the information necessary to maintain control of facility systems and equipment.
- This can be accomplished through planning meetings, pre-job briefings, clarification of unclear procedures and frequent supervision.