

LESSONS LEARNED FROM 30 YEARS OF NUCLEAR DECOMMISSIONING AND ENVIRONMENTAL REMEDATION

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Abstract:

AECOM is an international leading provider of fully integrated engineering, construction, programme management, operations, nuclear decommissioning, waste management and technical services to public and private clients. AECOM, through its dedicated strategic business unit “Nuclear & Environment” has been managing the operations and clean-up of high hazard, complex nuclear sites for over 30 years - this has included the decommissioning of 20 reactors, clean-up of 1,290 waste sites and the operation of the only licensed deep geological repository in the world.

This paper draws on the vast experience we’ve gained over 150 “site-years” of managing complex, high hazard sites. After a brief description of AECOM, the paper highlights some of our major representative projects involving decommissioning of production and commercial reactors as well as nuclear fuel cycle facilities, clean-up and remediation of nuclear and hazardous sites, and waste management.

A wide range of challenges, either common or unique to the sites, generated by routine operations, off-normal events or accident situations, has allowed AECOM to accumulate a wealth of lessons learned. A summary of these are in the final part of the paper under the theme Experience Leads to Improved Performance.

1. INTRODUCTION AECOM’s Nuclear and Environment business provides programme management; planning, design and engineering; systems engineering and technical assistance; construction and construction management; operations and maintenance; environmental remediation; waste management and decommissioning, dismantling and closure services to a broad range of clients, including the Nuclear Decommissioning Authority (NDA) in the UK and the US Department of Energy, as well as privately owned utilities. Currently, AECOM is the lead organisation responsible for managing annual expenditure of over €4.8 billion on projects in the UK and US, has saved its customers around €2 billion and has an excellent industrial and nuclear safety record.

2. PROJECTS

In this section, the paper outlines a selection of major projects that have contributed to AECOM’s experience including the River Corridor Closure Project (US), East Tennessee Technology Park (US), Sellafield Sites (UK), the Waste Isolation Pilot Plant (US), the UK’s Low Level Waste Repository, and Decommissioning of the “ThreeYankee” reactors (US). AECOM’s general decommissioning capabilities and knowledge is also described.

3. EXPERIENCE LEADS TO IMPROVED PERFORMANCE

The last section of the paper discusses lessons AECOM has learned over three decades of managing its sites, which it has embedded in its approach and now brings to bear on its current projects to support safe, reliable and cost effective delivery. These highlight the need for a relentless focus on safety; the importance of understanding the required end state and “starting with the end in mind”; the need to move from the an operations approach to the discipline of managing a project with a decommissioning mindset; the value of experienced subject matter experts in developing the technical approach and optimised decommissioning plan; the benefit a fully underpinned cost and schedule baseline provides; the recognition that in decommissioning most items end up as waste so an optimised waste disposition plan is essential; and how crucial continuous and open engagement with the full range of stakeholders is.

Country or International Organization

AECOM

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