

Environment & Nuclear Business Group

*Managing Some of the World's
Largest and Most Complex Nuclear
Projects*

Thursday, April 9, 2015

ch2m.SM



Founded on Values

CH2M was established in 1946 by three engineers and a professor, and has operated from its very beginning on **four simple values**: take care of clients, deliver great work, do right by employees, and stay true to our integrity and honesty.

Holly Cornell



James Howland



Burke Hayes



Fred Merryfield





CH2M Overview



- Headquartered in Denver, Colorado
- More than **22,000** employees worldwide
- US\$**5.4** billion in revenue (2015)
- Broadly diversified across multiple market sectors
- Performing work in more than **94** countries with more than **19,500** active projects in 2015





CH2M – A Global Leader

- We help our clients build a better and more sustainable world
- We provide:
 - Full service program/project management
 - Design, design-build
 - Operations management
 - Consulting services
 - Construction management
- We serve diverse client sectors:
 - Environment & Nuclear
 - Governments
 - Cities
 - Transportation
 - Water
 - Energy
 - Industry



A white decorative line starts at the top left, curves slightly down, then rises to a small peak, dips into a shallow valley, and finally rises sharply towards the top right corner.

Nuclear Sector Services

CH2M Nuclear Capabilities and Expertise





CH2M Nuclear Services Profile

CH2M provides technical and engineering services, management and operations, innovative clean-up and environmental remediation for commercial and government nuclear facilities and sites worldwide

- Strong safety culture
- Specializing in the management of complex nuclear programs and projects around the globe
 - Excellent track record of cost and schedule performance at the program level
- Successful DOE-EM and international portfolio
 - Decommissioning and demolishing of highly radioactive facilities
 - Retrieval, characterization, treatment, packaging, and disposal of waste
 - Nuclear remediation
- Strength in nuclear operations (personnel)
 - Management and operations of nuclear facilities
 - Construction of complex, first-of-a-kind nuclear facilities
 - Handling, storage, and disposition of spent nuclear fuel





Fukushima Progress to Date

- ATOX Integrated Dose Reduction (IDR) Planning #1 (in cooperation with the Agency for Natural Resources and Energy - ANRE)
- ATOX Integrated Dose Reduction Planning #2 (in cooperation with International Research Institute for Nuclear Decommissioning - IRID)
- Hitachi Dose Reduction Plan for analyzing various technologies and development of a methodology in support of dose rate reduction at Fukushima Daiichi Unit 1
- CH2M has received several task orders for Fukushima Daiichi decommissioning consulting under our Master Services Agreements - one for planning onsite decommissioning work at Daiichi and one for offsite remediation



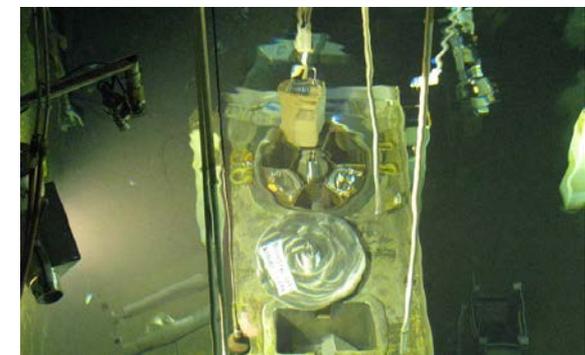
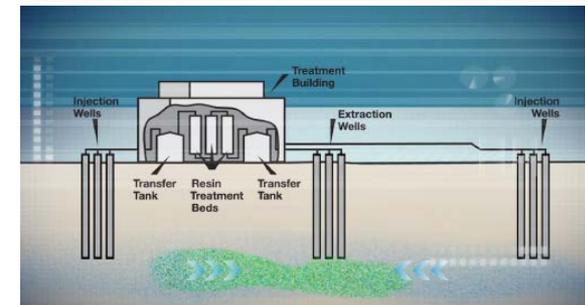
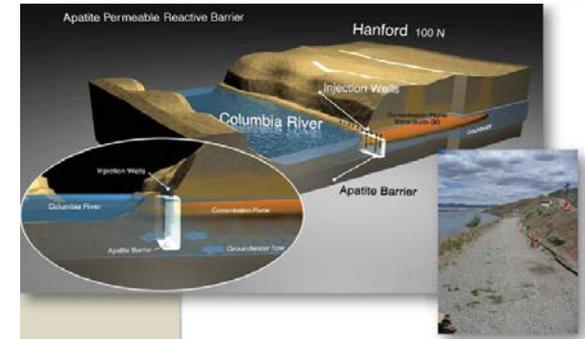
Nuclear Sector Major Programs

- Hanford Plateau Remediation Contract
 - \$5.8 billion for environmental remediation, facility disposition, and waste management of the Hanford Central Plateau through 2018
- Idaho Cleanup Project
 - \$3.4 billion for environmental remediation, facility disposition, waste management, nuclear fuel handling through 2015
- Hanford River Corridor Contract
 - \$2.2 billion to safely clean up and close facilities and waste sites located in Hanford's Columbia River corridor through 2015 (pending 3 year extension is being evaluated)
- East Tennessee Technology Park D&D Contract
 - \$2.2 billion for environmental remediation and decommissioning operations through 2020
- National Nuclear Security Site
 - \$3 billion to manage all environmental remediation and waste management of site through 2016
- Savannah River Site Liquid Waste Contract
 - \$3.3 billion to facilitate operational closure of radioactive liquid waste tank farms through 2017
- Dounreay Decommissioning Programme
 - £1.6 billion environmental cleanup through 2022-25



Relevant Projects

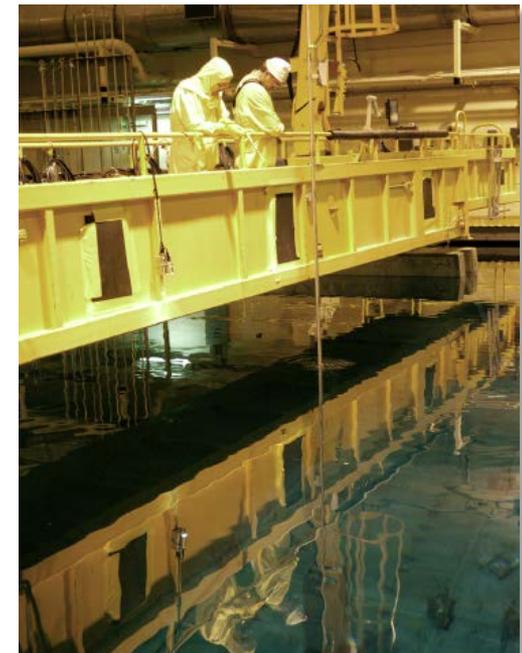
- **Apatite Permeable Barrier Systems**
 - Installed an apatite barrier in the soil to halt the migration of a strontium-90 plume and clean up the aquifer at Hanford
- **Groundwater Treatment**
 - CH2M HILL manages five groundwater treatment systems that pump and treat contaminated groundwater from the aquifer using an ion exchange resin to strip specific contaminants from the water before it is pumped back into the ground
 - The new treatment resin retains more than 15 times as much contaminant than previous resins. This means the resin does not have to be changed out as often, which reduces worker handling and material costs
- **Radioactive Sludge Retrieval and Treatment**
 - Using long-handled tools, workers process the material under water, transferring it to copper inserts and then into stainless steel structures





Relevant Projects

- **Decontamination and Decommissioning**
 - Successfully decontaminating and decommissioning highly contaminated facilities and reactors through multiple technologies
- **Spent Nuclear Fuel Management**
 - CH2M currently manages more than 200,000 fuel elements and has experience with various fuel storage systems, and fuel storage facility operation, storage facility design and construction, spent fuel handling and management, pool to pad transfer, cask loading, fuel inspection and drying, and damaged fuel handling.
 - Treating and disposing of 900,000 gallons of sodium bearing high-level radioactive waste from SNF reprocessing activities
- **Operational Closure of Liquid Waste Tanks**
 - Treatment and disposal of radioactive liquid waste
 - Operational closure of the tanks and the deactivation of the major liquid waste facilities and equipment





Relevant Projects

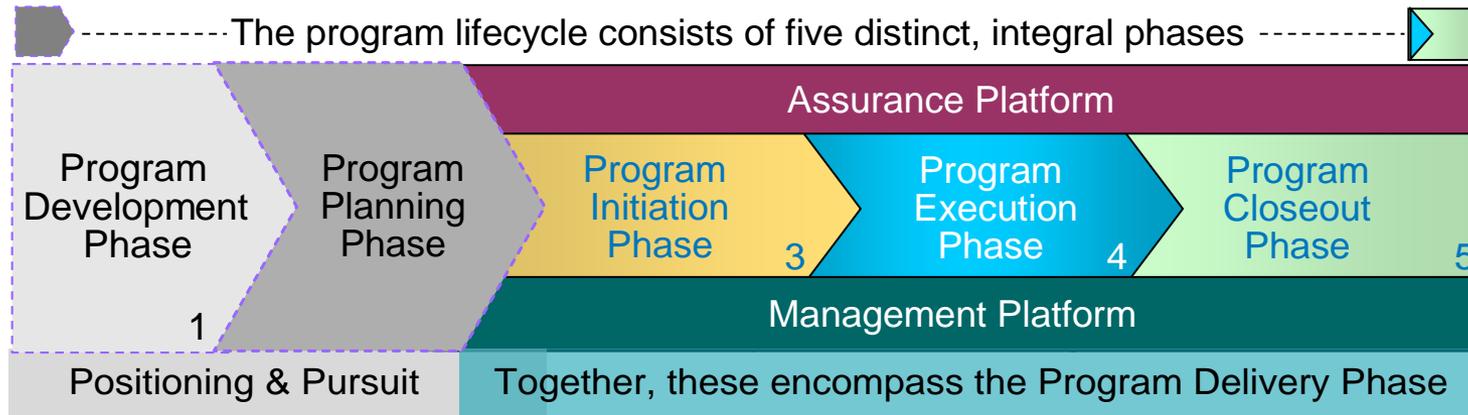
■ Integrated Waste Management

- Our integrated waste strategy provides a well-defined path for the compliant management of all waste generated by ongoing operations and decommissioning activities in a cost-effective and reliable manner
- We found many unexpected ways to innovate in waste packaging, both through enhanced characterization and different packaging forms that resulted in:
 - Increased worker safety
 - Decreased cost
 - Accelerated schedule
- Safely manages all waste forms and identifies and mitigates gaps and uncertainties with good management practices that are predictable and reliable





Program Management Framework



- An integrated and disciplined approach to delivery of multiple projects at the same time to achieve common goals. It uses a combination of management tools and a shared leadership and vision to achieve common benefits between component projects that make up the program

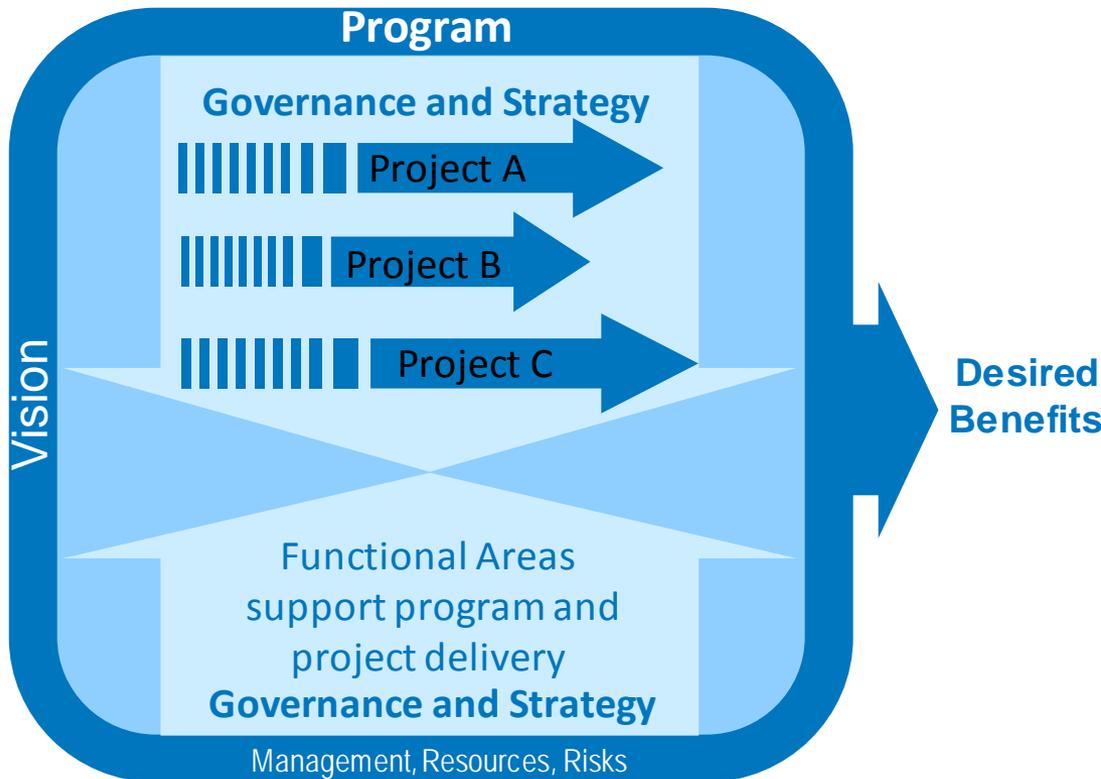


Program approach versus traditional project approach



Program Approach

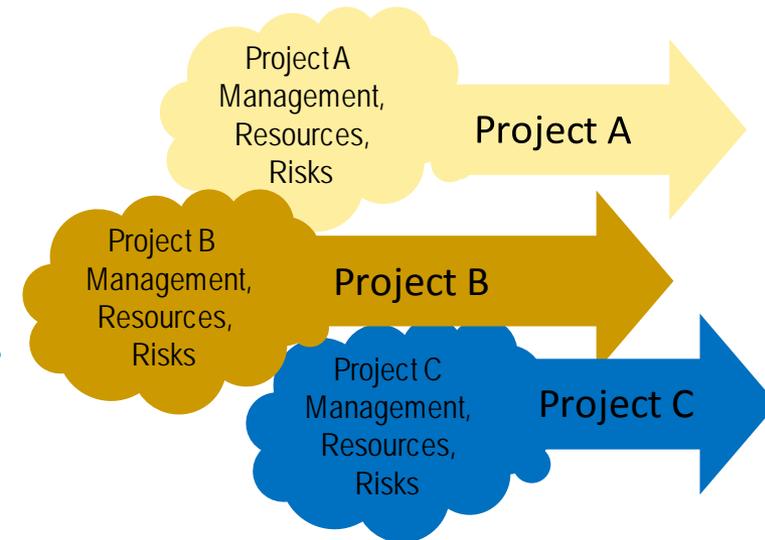
Integrated Project Delivery



Program management *supports* and *surrounds* project management to deliver an overarching set of benefits

Project Approach

Discrete Project Delivery



Project-by-project management focused on individual project outcomes



Thank you

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