



Sandia National Laboratories Support of the Iraq Nuclear Facility Dismantlement and Disposal Project (NDs Project)

John R. Cochran
jrcochr@sandia.gov

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Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company,
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In a Sentence

Providing training, consultation & limited equipment to the Government of Iraq (GoI), so the GoI can cleanup its former nuclear complex and safely dispose of the radioactive wastes



Program Background

- **Sandia supporting U.S. Dept of State's Iraq NDs Program since 2006**
- **Iraq ND's Program is international program providing training, consultation & limited equipment to the GoI, so GoI can cleanup its former nuclear complex and safely dispose the radioactive wastes**
- **Focused on Al Tuwaitha Nuclear Complex near Baghdad**
- **4th year of possible 7 year project, with a clear endpoint**



Participants in Iraq NDs Program

- **International Atomic Energy Agency**
- **U.S. Dept of State**
- **U.S. Nuclear Regulatory Commission**
- **U.S. Environmental Protection Agency**
- **Sandia National Laboratories and Texas Tech University**

- **Other countries involved: France, Italy, Ukraine**



Nuclear Complex at Al Tuwaitha

- **1 km² nuclear complex**
- **Two research reactors (Russian & French)**
- **Fuel fabrication facility**
- **Radiochemistry Building**
- **Metallurgy Facility**
- **Isotope Production Facility**
- **Waste Management Facilities**

Al Tuwaitha Covers $> 1 \text{ km}^2$

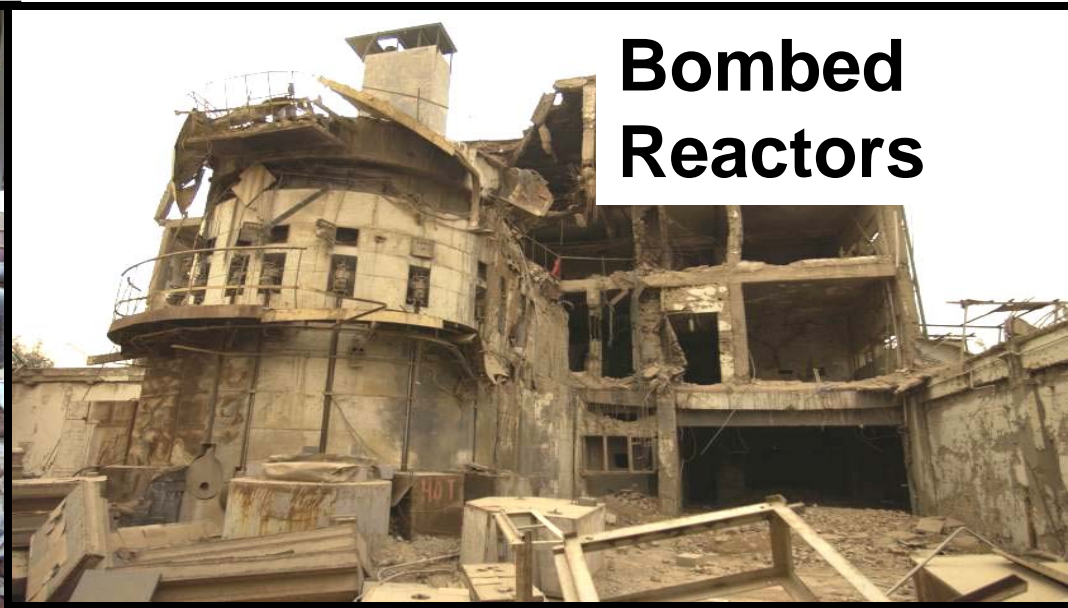


Decommissioning & Radioactive Waste Problems at Al Tuwaitha

Radioactive wastes



Bombed Reactors



Old disposal areas



Sealed Sources





Sandia's Uniqueness

- **Internationally-recognized experts in management & disposal of radioactive waste:**
 - Led science and Safety Assessment for worlds only mined geologic repository - WIPP
 - Conducted the Safety Assessment of the only U.S. intermediate-depth disposal facility - the Greater Confinement Disposal (GCD) boreholes
 - Lead lab for assessment of Yucca Mountain Program as disposal site
 - For 7+ years, Sandia has assisted IAEA in development of borehole disposal system
- **Sandia has breath and experience necessary to successful support the Iraq NDs Program:**
 - Environmental Restoration Program > 20 years
 - Member of the DOE's Radiological Assistance Program
 - Developed & teach broad range of rad safety training classes



2010 Workscope

- **Draft Decommissioning Plan all Decommissioning in Iraq**
- **Help Setup Ground Water Monitoring Program with**
- **Supply Groundwater Sampling Equipment & training**
- **Draft Project Plan for Monitoring/Maintaining Underground Tanks containing Liquid Rad. Waste**
- **Waste Management Training Program at SNL**
- **Help Setup Radioanalytical Laboratory in Iraq (Texas Tech)**
- **Training Human Health Assessments (Texas Tech)**

IAEA Planning Meeting



Training at Sandia's Mixed & Radioactive Waste Management Facility



Building Relationships





2011 Workscope

- **Help setup program for near-surface disposal facility for Iraq's radioactive wastes**
- **Establish “planning basis” for all decommissioning and rad waste management**
- **Ongoing support in decommissioning planning and groundwater monitoring**
- **Setup Databases and servers to archive decommissioning data (Texas Tech)**
- **Help establish educational programs in Iraqi universities in sciences related to Iraq NDs Program scope (Texas Tech)**



Success Story

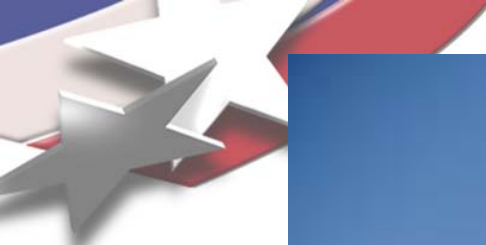
First Field Work June 2009



LAMA Before



LAMA During



LAMA After Stages 1 & 2



Closing

Modest project that is having a significant effect in Iraq