

Lessons Learned from an ES&H Coordinator

CJ Backlund, CIH, CSP, Sandia National Laboratory, Operational Risk Department

Insert SAND #



Sandia National Laboratories is a multimission laboratory managed and operated by National Technology and Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International, Inc., for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.

Governance of Sandia Laboratories

Sandia Corporation

- AT&T: 1949–1993
- Martin Marietta: 1993–1995
- Lockheed Martin: 1995–2017
- National Technology and Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc.: 2017–present
- Government owned, contractor operated

Federally funded
research and development center



Energy



Energy Research

ARPAe, BES Chem Sciences, ASCR, CINT, Geo Bio Science, BES Material Science

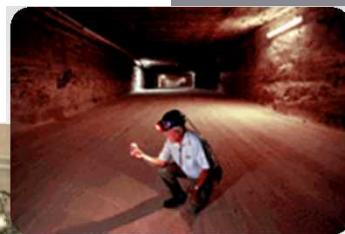
Renewable Systems & Energy Infrastructure

Renewable Energy, Energy Efficiency, Grid and Storage Systems



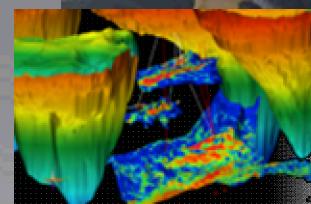
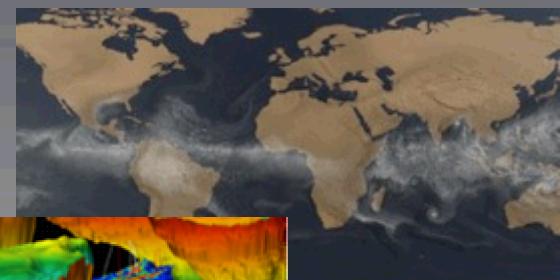
Nuclear Energy & Fuel Cycle

Commercial Nuclear Power & Fuel, Nuclear Energy Safety & Security, DOE Managed Nuclear Waste Disposal



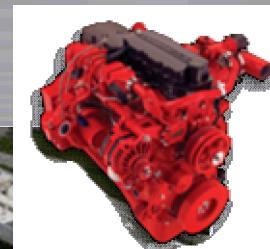
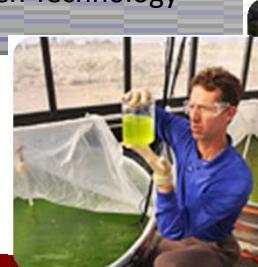
Climate & Environment

Measurement & Modeling, Carbon Management, Water & Environment, and Biofuels



Transportation Energy & Systems

Vehicle Technologies, Biomass, Fuel Cells & Hydrogen Technology





Learning Never Ends

Significant Events Lead Sandia To Engineered Safety Process





**Reaping the benefits of Work
Planning and Control**

GeoMechanics Lab

Rock Saw Before Housekeeping



Rock Saw After with Engineering Control



Watch as the rock is sawed in the Wet Lab



Implementing a Silica Exposure Control Plan



Silica: Engineering Control for the Coring Operation

Old coring Machine: Manual



New Coring Machine: Auto



Not Your Typical Water Bottle

Ergonomic Challenge





Ouch!! My shoulder hurts!!



Possible Solution

Safety Goal Impacted

MOW Sustains OSHA Recordable Injury (DAIR)

Medical specified PT as treatment & restriction

MOW Reported to medical after "tweak" in shoulder (Datta)

Duration/Rep
Lifts 25% of 30 jugs (1090 ft 9925)

MOW was removing 5 Gallon H2O Jug from Truck cab.

Lifts 5 GAL weighs ~40 lbs (FORCE) at 9925

Reaching into cab (Awkward Posture)

Reduce # of trips from 2 to 1

RT takes 40 min
-Time savings
-Env Impact
-Efficiency
-\$

Truck Size Limitation (No stacking)

Pallet fits in truck bed

Manually removing jugs to H2O storage racks at 9925

Traverse: 5-7 FEET 9925

Manually move jugs from scissor lift at 1090

Cannot use 9925 forklift because no Pallet

Have used FC in past

Ergo Risk Factors

- Force
- Posture
- Repetition
- Duration

Could stack 4 layers of bottles high.
12 jugs/pallet
limit stack to 3

Causal Analysis: Results



CHANGE
AHEAD

Ouch!! My rib hurts!!





Ergonomics Lesson #2

Use the right tool!

Yes, this is me in summer time!



Challenges include no grid power!

Generator Shed



Generators inside the shelter





**It's March, so some of that snow has
already melted!**

Actions identified to prevent similar events in the future

5,000 gallon Diesel Tank Fire Damage

Region of Maximum Fire Damage to Diesel Tank



What's a pigeon got to do with it??





Electric Spark Generated Due to Improper Grounding of Facility Equipment

Location of the contact



End of the hose clamp





**And the sunset to
wrap this up.**