



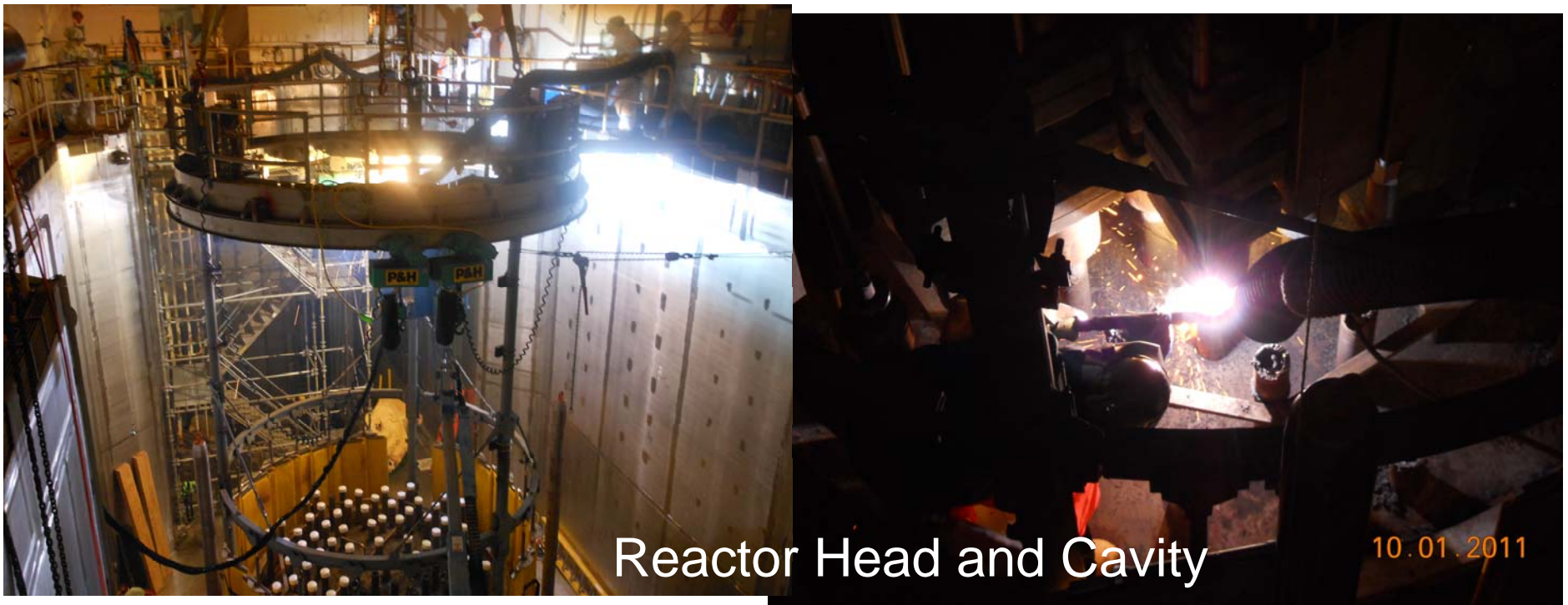
ZION SOLUTIONS LLC
An Energy Solutions Company

Zion Station Community Advisory Panel Status Update

November 28, 2011

Agenda

- Update
 - Industrial safety and radiological dose
 - Update of fuel and reactor vessel work
 - Yucca Mountain and The Blue Ribbon Commission
 - Fuel handling model presentation
 - Waste Transport requirements



Safety

Injury Type	Pre-License Transfer	Post License Transfer	2011
Report Only	2	23	17
First Aid	1	32	30
OSHA Recordable	0	2	2

	# OSHA Recordable Injuries	OSHA Recordable Rate
2011	2	0.78
Post License Transfer	2	0.64

Dose

October 6.195 Rem
Year to Date 21.537 Rem



Perfect Record Award from the National Safety Council

* 817,000 hours worked to date

Yucca Mountain Background

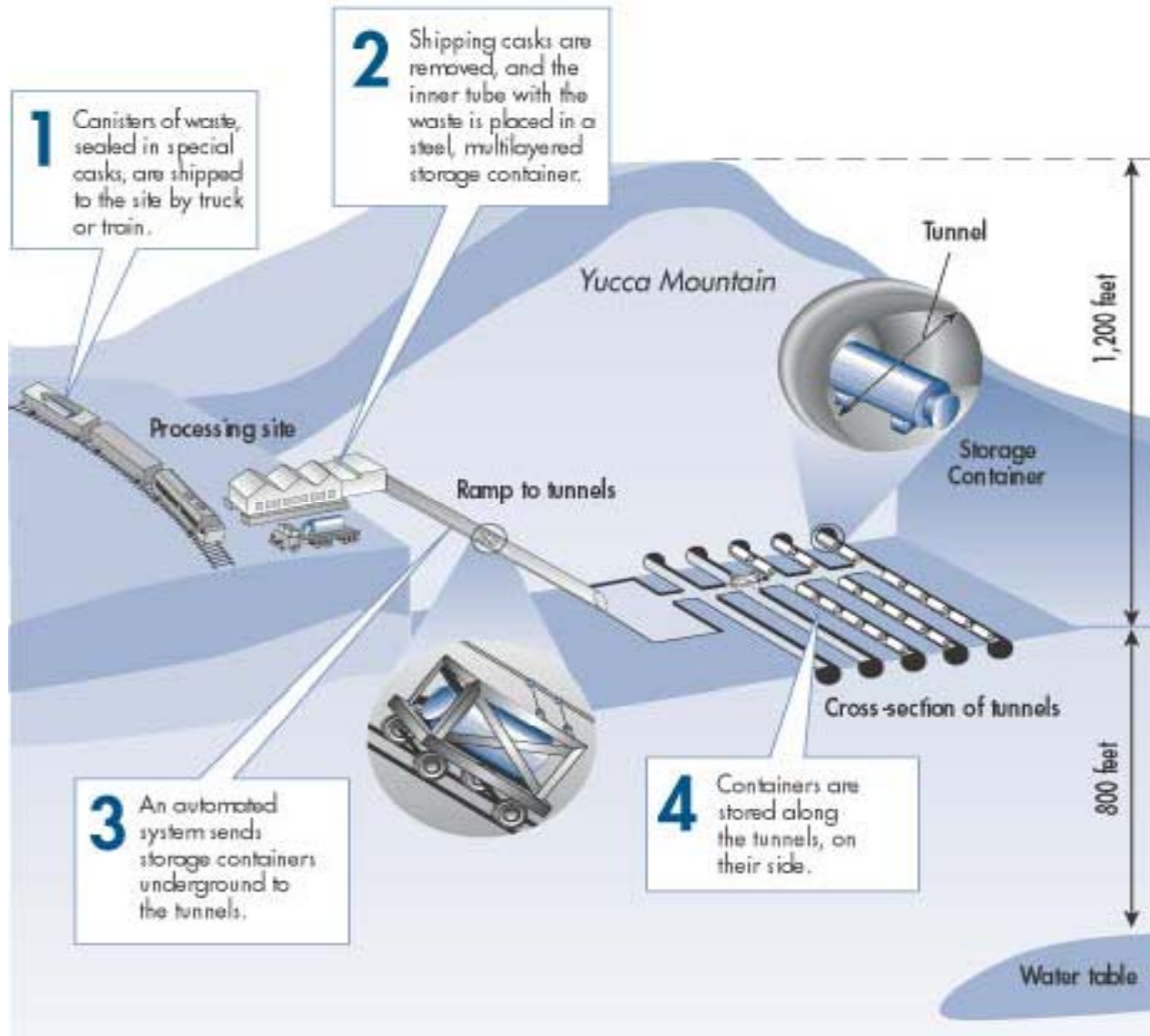
- 1982 Nuc. Waste Policy Act
- 3 Sites evaluated
- 2002 DOE selected YM
- 2008 YM License submitted
- 2009 YMP shut down



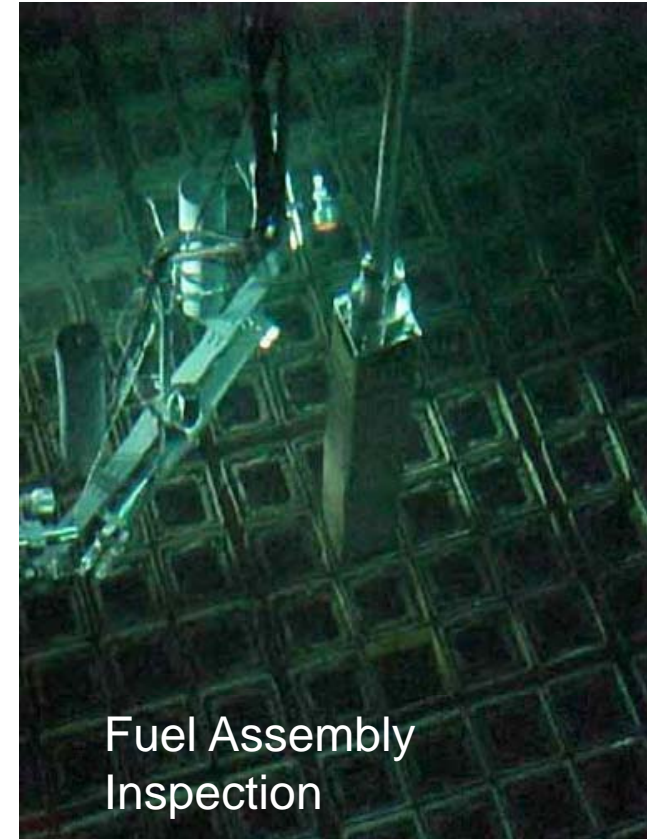
- \$12 billion spent on characterization
- \$200 million spent on shutting it down



Yucca Mountain



- New Consent-based approach for future locations
- New Organization dedicated solely to HLWM
- Access to the funds paid into by rate payers
- Prompt efforts to develop one or more facilities
- Support innovation in Nuclear technology/workforce
- Active US participation with international community on issues related to waste and security



- **Fuel Modifications and Inspections**
 - Westinghouse started work – 07/18/11 on schedule

- **Dry Cask Storage Canisters**
 - First canisters set to arrive – 05/12

- **ISFSI**
 - Engineering nearly at 90% complete
 - Construction begins – 03/12

- **Fuel Building Modifications & Crane Upgrade**
 - Engineering > 50% complete
 - Construction begins – 05/12

- **Vertical Cask Transporter**
 - Lift Systems, Inc. factory test – 09/28/11
 - Delivery and final erection – 03/12
- **GTCC Waste Canisters**
 - Unit 2 sets arrived on site 08/22/11 and 09/13/11
- **Fuel Canisters**
 - Petersen/GE-Hitachi/Hitachi-Zosen are NAC fabricators
 - 95% of materials received by fabricators

- **Visual Inspections**
 - 4-Sided Visual of 2,226 Assemblies
 - Schedule: 12/01/11 – 01/24/12
- **Cask Load Pit Clean Up**
 - Schedule: 01/24/12 – 02/07/12
- **Sipping**
 - Schedule: 02/07/12 – 02/20/12

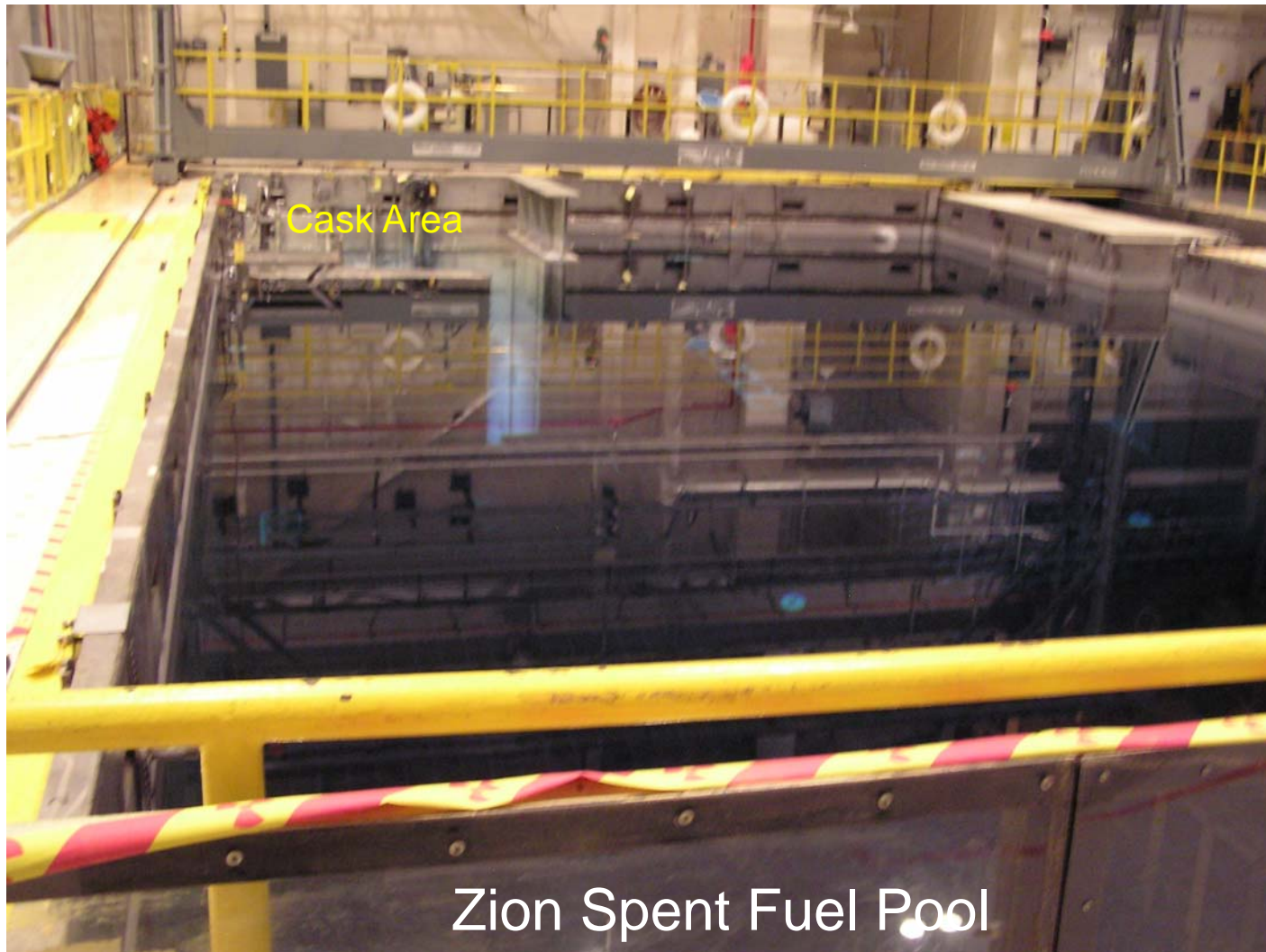
Vertical Cask Transporter



Zion VCC Transporter

Fuel System

- Demonstration of system model



Containment General Preparations for Reactor Vessel Internals Segmentation

- Restore building exhaust
- Electrical and mechanical isolation
- Insulation removal
- Draining
- Reactor Vessel piping cut and plug
 - Isolate cavity from RCS loops



Reactor Coolant Leg 10.04.2011

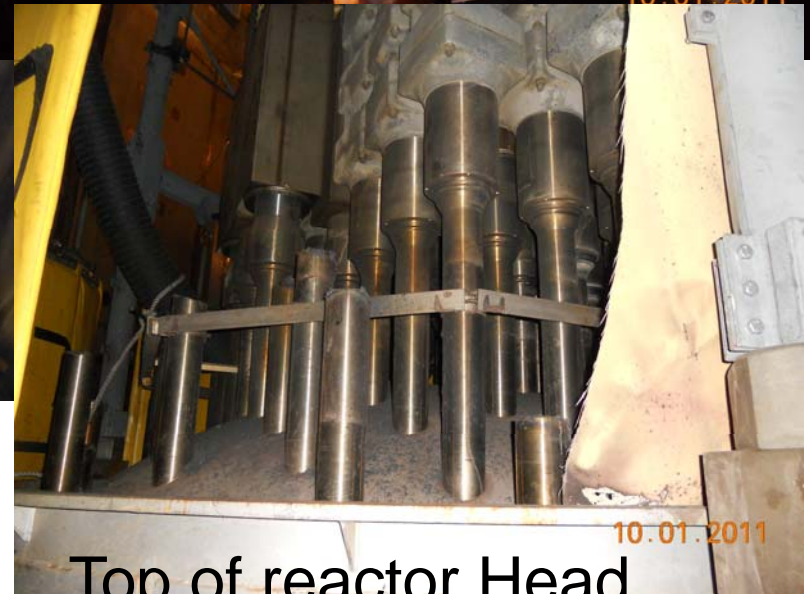


Lower U-2 Containment

Containment General Preparations for Reactor Vessel Internals Segmentation



Reactor Head Inside Cavity



Top of reactor Head

Other D&D work

- ISFSI area prep work
- Rail upgrade prep work
- Reconfiguration of the warehouse
- Waste operations including shipments to Clive
- Reactor Head
 - Shipment



Reactor Head Shipping Container

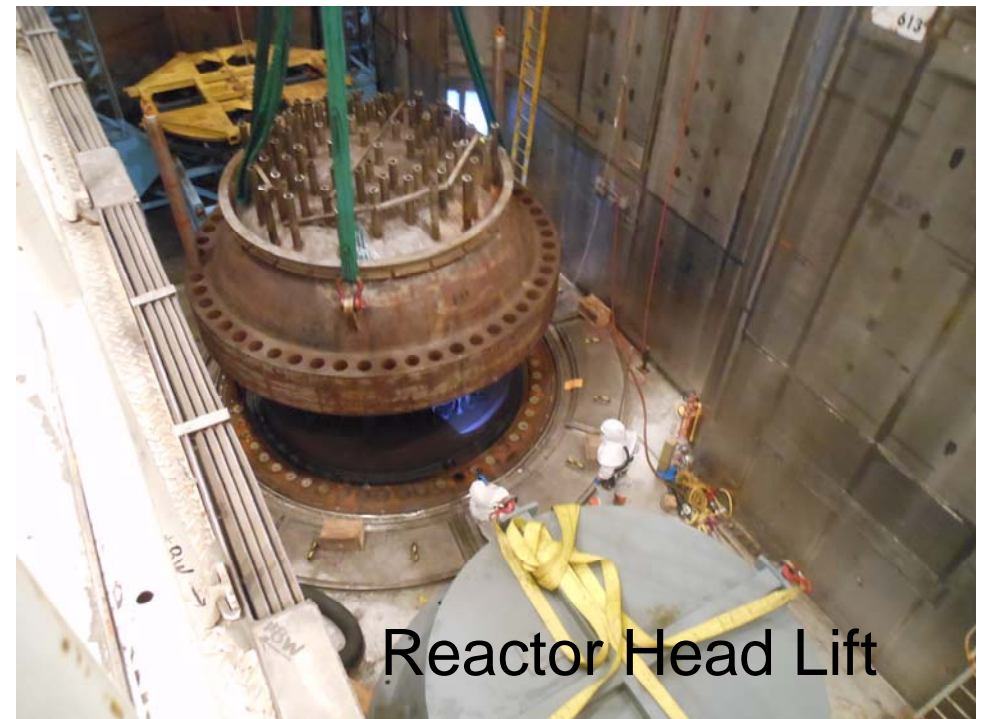
SNS Mock Up Testing Complete

SNS tools moved into U-2 containment

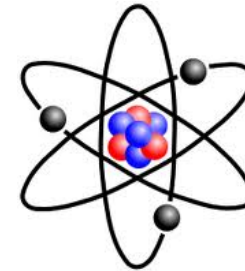


Mock Up Testing of Cutting Tools

- Terminology, definitions and acronyms
- Identification of containers used for transporting wastes
- Identification of transport methods
- Federal, State and Local Requirements
- Emergency requirements



- Code of Federal Regulations (CFR)- Federal Laws that govern many industrial or commercial tasks.
- Contamination- Radioactive material in an unwanted place.
- Radiation- Energy that cannot be identified with the eye, similar to radio waves or light.
- DOT- Department of Transportation
- FRA- Federal Railroad Administration
- IEMA- Illinois Emergency Management Agency
- NRC- Nuclear Regulatory Commission



Container Types for Class A Low Level Waste (Boxes)



Intermodal- Large box

Commercially available item



Sealand- Larger box

Commercially available item



Both containers can ship via truck and via rail

Intermodals on Spine Railcar, Class A LLW

Here is an example of Intermodal containers shipped on a railcar
(8 intermodals at a time)



Gondola Railcars Class A LLW

Gondola or Mil-gondola

-Large Railcar used throughout the industry and used for bulk items



High Sided Gondola

-Extra Large Railcar used throughout the industry for less dense bulk items



Specialty Truck Transport

- Specialty Truck Transport: Used for various large and odd sized components
- Below, left is an example of a large component in transit and below, right is a picture of the Unit 2 reactor head prepared for shipment.



- Truck transport used for boxes and for “Special Item Shipments”
- Rail transport will be used for the majority of the shipments
 - Unit trains will consist of 30 railcars
 - On site rail car movements will be performed using a railcar mover



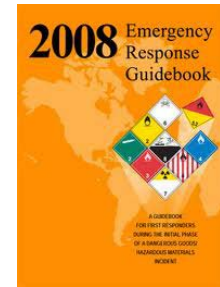
- All shipments are governed by the CFR (DOT, NRC and/or FRA)
- Shipment regulatory oversight performed by the Nuclear Regulatory Commission (NRC) and Illinois Emergency Management Agency (IEMA)



- Radiological requirements
- Permits are obtained for truck loads that are over dimensional

Emergency requirements

- The DOT requires all hazardous materials shipments are accompanied by a 24 hour observed phone number
- Person answering the phone must be knowledgeable of the shipment



Unit Train to Clive



Clive Disposal Facility

