

Where Do We Go With Yucca Mountain?



INMM Spent Fuel Management Seminar

February 2, 2012

Lake H. Barrett

L. Barrett Consulting LLC

Lake@Lbarrett.com

Nuclear Waste Policy Act (NWPA)

- **Established National Policy For Nuclear Fuel Waste Management & Disposal In 1982 & 1987**
- **Established a Technical & Political Process**
 - **Site Evaluation**
 - **State Disapproval**
 - **Congressional Override**

NWPA Progress 1987-2009

- **EPA Standards & NRC Regulations & DOE Rules Completed**
- **Yucca Site Scientifically Evaluated In Great Detail for Million Year Disposal and Also Preclosure Fuel Handling/Storage**
- **Site Designated By President**
- **Disapproved By Governor of Nevada**
- **Disapproval Over Ridden By Congress**
- **Yucca Mountain Approved By Law As First Repository**

2009

- **President Obama & Secretary Chu Decide that Yucca Mountain Is “Unworkable”**
 - **Primary Campaign Promise to Senator Reid**
 - **NRC Technical & Management Staff Concluded No Technical Faults & DOE License Application Demonstrated Regulatory Compliance**
 - **DOE & NRC Management Terminates Yucca Mountain Staffs**
 - **Records Preserved**
 - **Licensing Process Suspended**

Sunk Costs

Thru FY 2010 (FYE\$)

- **Yucca Direct: \$8B**
- **All DOE RW: \$11B**

Current Situation

- **DOE & NRC Have Stopped All Yucca Mountain Work**
- **First State Lawsuit To Force DOE To Continue Licensing Fails On “Ripeness”**
- **Second “Mandamus” Lawsuit To Force NRC To “Approve or Disapprove In Process**
 - **Decision Likely This Summer**

Repository Future Option: NRC Licensing Lost

- **DC Circuit Court Does Not Grant “Mandamus” Order**
 - High Threshold Not Achieved
 - Nothing Happen Until End of Obama Administration
 - 2017?
 - 2013?
- **DOE Looks For Volunteer Storage Site**
 - Yucca Possible but ?

Repository Future Options: NRC Licensing-Forced & Obama Win-1

- **NRC & DOE Accept & Not Stonewall:**
 - **Licensing Restarts**
 - **Licensing Grinds Two Years to Late 2014**
- **Unlikely DOE Does More Than Licensing**
 - **Other Options Need NV State Agreement**
- **Obama & Reid Gone Jan 2017**

Repository Future Options: NRC Licensing-Forced & Obama Win-2

- **NRC & DOE Stonewall**
 - **Invent Reason Not to Resume Licensing**
 - **No Budget**
 - **Unwilling Applicant**
 - **NRC Disapprove License Application**
 - **3:1 D:R on Commission after 6/12**
- **Nothing Yucca Until At Least 2017**
 - **WIPP?**

Repository Future Options: Obama 2012 Loss

- **Licensing Likely Restarts**
- **Program Likely Restarts**
 - **Under Gingrich-Santorum: Stronger Restart**
 - **Under Romney-Paul: Slower Restart**
- **Likely Intense Nevada Negotiations Try**
 - **Agreement For Hybrid Repository-IUFMF??**

Integrated Used Fuel Management Facility (IUMF)

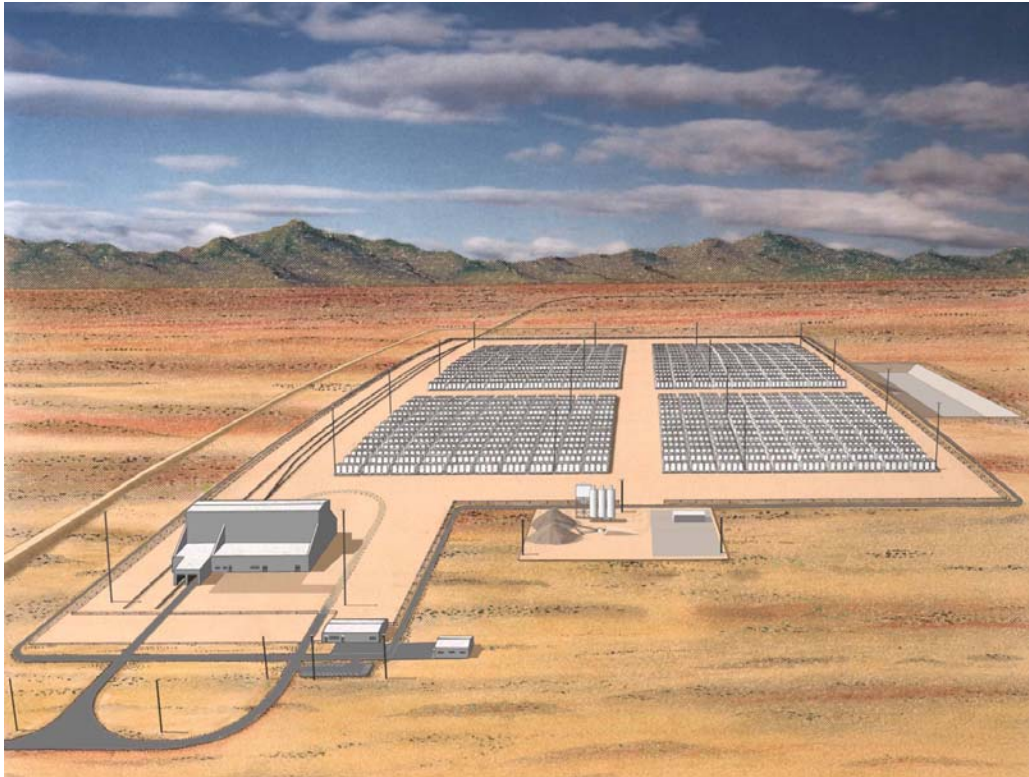
- **Administration & Congress Will Evaluate BRC Recommendations**
 - **Little Action Until After Election**
 - **Lame Duck Long shot**
 - **Unlikely NWPA Major Revisions Until 113th Congress**
 - **Maybe Spring 2014**
 - **2013: Likely Federal-Local & State Negotiations Begin for Consensus IUFMF Somewhere**

Integrated Used Fuel Management Facility (IUMF)-1

- **First Phase of Waste Disposal System**
 - **Like Old Monitored Retrieval Storage (MRS) Facility**
 - Use Waste Fund & Volunteer One Time Fee
 - Prepare Repository Ready Waste Package To Match Geologic Media/Design
 - **Receive All Dual Purpose Transport/Storage Canisters & Casks**
 - Starts With Shutdown Reactor Fuel
- **Plus Whatever a Host State Negotiates Into Its Partnership Multifunctional Hybrid Facility**



Integrated Used Fuel Management Facility (IUMF)-2

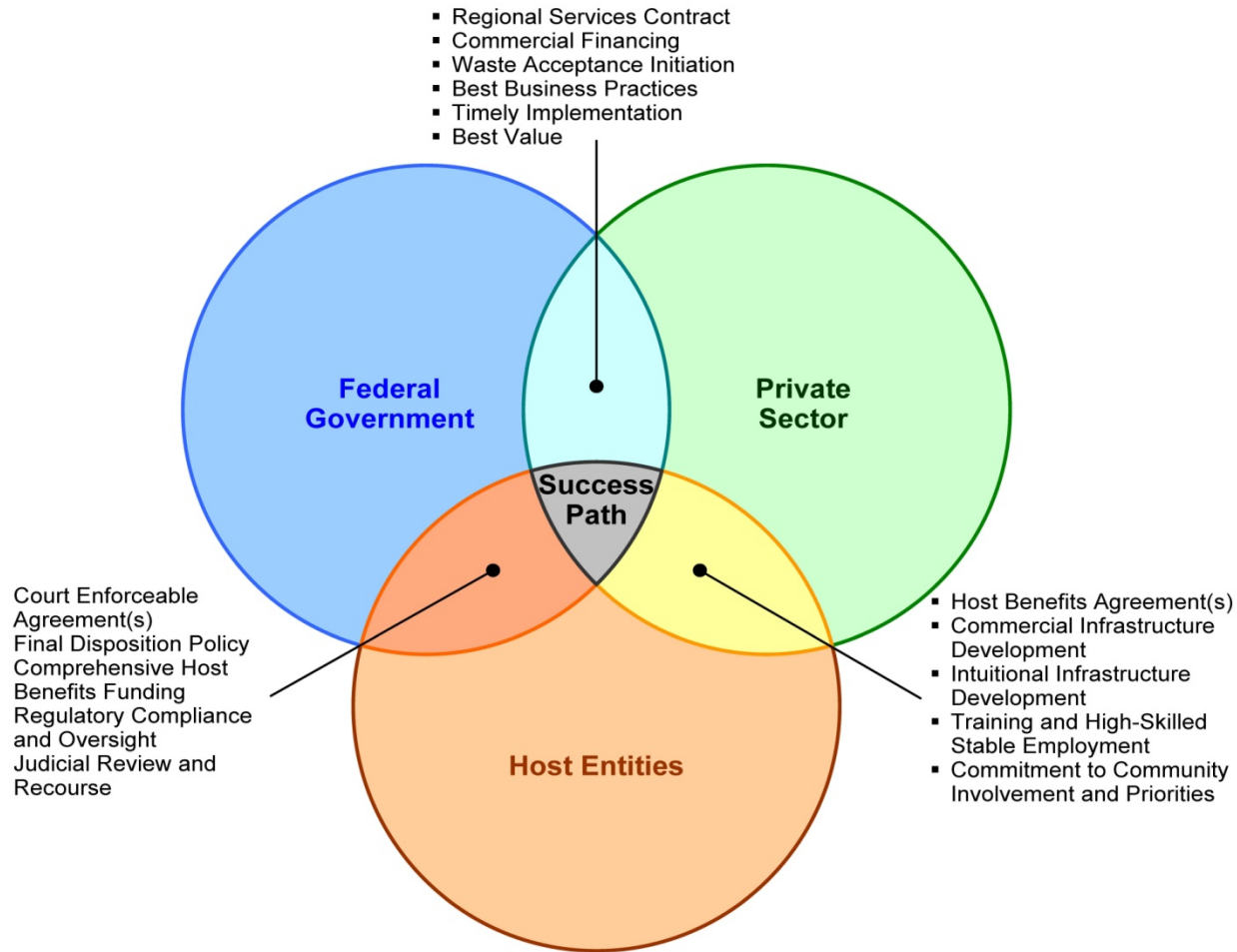


- **Partnership Facility**
 - Joint State/Local/Commercial Team
- **Phased Development**
 - Like Private Fuel Storage
- **Modular Construction**
- **Add R&D Functions As Negotiated**
 - Long Term Storage R&D
 - Recycle Technology Development
 - Prototype
 - Pilot Plant

Integrated Used Fuel Management Facility (IUMF)-2: Host State Negotiated Mission Adds?

- **Long Term Used Nuclear Fuel Storage R&D Functions**
 - **Phased Transition of Current NE UNF Storage R&D Functions to Host State**
- **Center of Excellence for UNF Recycle R&D**
 - **Phased Transition of Current NE UNF Recycle R&D Functions to Host State**
 - **Pilot Recycle Plant??**
- **Center of Excellence For Other Desired DOE R&D Functions**
 - **SMRs?**
 - **Advanced Reactor R&D?**
 - **Non Nuclear Science Missions**

Integrated Used Fuel Management Facility Partnership Relationships



**From Integrated Used Fuel Management
EnergySolutions Final GNEP Business Plan DOE/NE/24503-2.2**

Hybrid Facility Would Be Very Attractive to Former GNEP Sites

- **Open National Dialog**
 - Swedish Model
 - BRC Recommended
- **What Will States Offer To Keep Or Gain Safe Mission & Jobs?**
 - NV, NM, ID, SC, OH, KY, TX, TN, AZ, ??
- **Competition: New Winners & Old Losers**
- **See EnergySolutions 2009 IUFM Business Report**
 - http://www.brc.gov/sites/default/files/meetings/presentations/iufrm_brc_draft_es_08-21-10.pdf
- **Tremendous Future Opportunity**
 - Future Presidents & Congresses Would Support Almost any Reasonable Agreement

Yucca Mountain: The Perfect Site

- **IUMF Plus Ready Repository**
 - **Can Command Huge Benefits**
 - **If 50:50 Share of Avoided New Repository Development Cost Between Host Nevada & Federal Government results in \$10B++ to Nevada**
 - **Can Command Major Share Holder Control**
- **Will They Negotiate A Business Relationship?**
- **How Safe is Safe?**
- **How Fair is Fair?**
- **How Good is Good Enough?**

Where Do We Go With Yucca Mountain?

Only Future

Nevada Elected

Officials Know

Backup Slides

PROGRAM SPENDING HISTORY
MONIES EXPENDED 1983 - 2009 (a)
(dollars in thousands)

	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY83 - FY09 Total
OCRWM														
FIRST REPOSITORY														0
Basalt Project.....			-12		60									490,529
Yucca Mountain Project.....	274,625	341,300	296,542	320,504	328,438	317,645	349,571	420,496	366,095	314,859	395,101	301,658	154,208	6,632,281
Salt Project.....	27	-238	-73	230			-72	-44	-1					521,164
RPT/Technical Support.....			17		4		-100	-23						169,094
TOTAL, FIRST REPOSITORY.....	274,652	341,062	296,474	320,734	328,502	317,645	349,399	420,429	366,094	314,859	395,101	301,658	154,208	7,813,068
SECOND REPOSITORY.....														0
WAST PROJECT														86,272
MRS.....			-11									-3		95,976
Engineering Development (b).....	2,641	1,828	-4	-18	10									127,107
Transportation Systems.....	3,317	2,114	267	-35	114	1,143	4,185	20,411	43,610	38,535	44,643	19,893	3,690	353,512
Waste Acceptance (c).....	675	738	972	1,116	1,178	925	504					0	455	25,857
Project Integration (d).....	1,033	1,752	626	1,003	843	972	3,234	6,990	7,549	8,890		-27		38,261
Spent Fuel Storage.....	3,318	1,588	-187	174	35									7,259
TOTAL, WAST PROJECT.....	10,984	8,020	1,663	2,240	2,180	3,040	7,923	27,401	51,159	47,425	44,643	19,863	4,145	647,972
PROGRAM INTEGRATION														0
Quality Assurance.....	15,478	10,670	10,513	11,006	12,433	11,601	13,333	15,540	14,425	12,915	10,871	12,110	5,935	218,378
Program Management & Integration (d,e)....	31,037	33,314	29,791	30,193	31,679	32,720	37,336	52,633	75,851	53,677	40,191	25,808	8,073	1,324,128
Human Resources & Administration.....	9,344	10,240	7,347	8,996	9,510	9,600	9,706	9,476	7,736	23,464	53,597	53,781	55,696	393,311
TOTAL, PROGRAM INTEGRATION.....	55,859	54,224	47,651	50,195	53,622	53,921	60,375	77,649	98,012	90,056	104,659	91,699	69,704	1,935,817
TOTAL (OCRWM).....	341,495	403,306	345,788	373,169	384,304	374,606	417,697	525,479	515,265	452,340	544,403	413,220	228,057	10,483,129
OCRWM (Cost by Appropriation)														0
Energy Supply R&D, Civilian Waste R&D.....	1,695	1,500												337,512
NWF Appropriation.....	145,611	193,837	155,195	267,360	174,724	93,699	126,118	156,563	252,131	143,078	186,290	192,914	145,390	6,573,002
Defense Appropriation (f).....	194,189	207,969	190,593	105,809	209,580	280,907	291,579	368,916	263,134	309,262	358,113	220,306	143,000	3,632,948
TOTAL (OCRWM).....	341,495	403,306	345,788	373,169	384,304	374,606	417,697	525,479	515,265	452,340	544,403	413,220	288,390	10,543,462
NON-OCRWM (g).....														0
NRC Fees.....	11,000	15,000	17,000	19,150	21,600	23,650	24,738	32,905	68,498	45,657	45,826	29,025	49,000	579,967
NWTRB.....	2,531	2,600	2,600	2,600	2,900	3,100	3,179	3,158	3,152	3,572	3,591	3,621	3,811	55,394
NWN.....														7,959
TOTAL (NON-OCRWM).....	13,531	17,600	19,600	21,750	24,500	26,750	27,917	36,063	71,650	49,229	49,417	32,646	52,811	643,320