

DEVELOPMENT OF A HIGH-LEVEL RADIOACTIVE WASTE REGULATORY STRUCTURE.

Presented to

Blue Ribbon Commission on America's Nuclear Future

Michael Voegele

September 1, 2010

Developing the Policy Bases

Interagency Review Group 1978 -1979

Solve within Current Generation

Public Involvement

Nuclear Waste Policy Act 1982, 1987

Three Federal Agencies

Complexity – E.g., EAs

Public Involvement

National Research Council, Board on Radioactive Waste
Management -1990

Path to Failure

Complexity

Unfulfilled Promises

Regulations - I

Environmental Protection Agency

Release Standard – Screening Issue

Technical Achievability; Not Risk-based

1000 Deaths in 10,000 Years in the World Population

Science Advisory Board Disagreements

Nuclear Regulatory Commission

Subsystem Performance Objectives - Uncertainty

Reasonable Assurance Finding at Construction

Authorization

Never Had Sole Reliance on Natural Barrier System

1985 Amendment To Allow Disposal in the Unsaturated Zone

Regulations - II

Department of Energy Siting Guidelines

Not Required to be Promulgated as a Rule;

NRC Concurrence Required

Directions for Siting in the Nuclear Waste Policy Act

9-5-3-1 Screening

Disqualifying Conditions; Expectations

Done Twice

Environmental Protection Agency Remand 1987

Not Technical; Procedural

Energy Policy Act of 1992 - Remedy

Nuclear Waste Policy Act Amendment

Regulatory Issues Created with the Amendment

DOE did not Amend its Siting Guidelines when the NRC Amended its Rule to Allow Disposal in the Unsaturated Zone
Compare All “Equally“

DOE was Left with the One Site that did not Match the Siting Guidelines – e.g., Groundwater Travel Time

EPA began with a Saturated Zone Focus and did not Address Potential Issues Related to Unsaturated Zone Disposal

Public Frustration Following Reneging on a Commitment
Important to Passage of the Nuclear Waste Policy Act

BRWM on U.S. Policy - 1990

The U.S. program is unique in its rigid schedule, in its insistence on defining technical requirements in advance for every part of the multi-barrier system ...

Encouraging an expectation of absolute certainty about the safety of the repository for 10,000 years and encouraging DOE program managers to pretend they can provide it ...Scientific trap.

The federal government must provide full public accountability as information about the risks changes with experience.

A policy that promises to anticipate every conceivable problem, or assumes that science will shortly provide all the answers, is bound to fail.

Lessons Learned

Changing the Rules to “Fit the Site” was Necessary Technically, but Institutionally, Probably could not find a Worse Way than the Way it was Done

Commitment to “Involve” the Public is Key, but More than Lip Service is Needed - EIS and NWPA’s NEPA Road Map

Public wants Rules that are Simple And Strict

State’s Argument that They have to Give Up the “Veto” to Negotiate is of Vital Concern

Trade-off was Hundreds of Contentions that the NRC staff did not Consider Acceptable

Attributes of a Path Forward - I

Nuclear Issues are Challenging. There is High Perceived Risk / Low Actual Risk; Cognizance of the Emotional Issues Required

Must Address

Trust,
Uncertainty,
Time

There Likely will not be a Volunteer; More than a “Bribe” is Needed

Public Involvement – Must be Real

Responsibility - Must be Real and Clearly Defined

Compensation Package - Must be Meaningful

Attributes of a Path Forward - II

Remarkably, 21 years after the 1987 EPA Remand, the U.S. Regulations Evolved to Essentially the International Consensus Position

(Screening probability is still too low)

There are Important Lessons to be Learned from the WIPP Compliance Certification Process

Involvement and Recertification Approach

Large, First of a Kind Engineering Projects Benefit from Proceeding in Stages (Prototypes)