

*High-Temperature Teaching & Test Reactor
(HT³R)*

Programmatic Information

Presentation to NRC

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UTPB's Technical Solution

High-Temperature
High-Temperature Gas Reactor
Teaching & Test
Technology
Reactor Facility

Basis for Technology Selection

- Andrews County
- Gen IV Technology
- Multifaceted Research Capability
 - Rad Lab (Fuel Cycle, Nuclear Structure, Hot Cells, “Rabbits,” etc.)
 - HTMP Lab (New High-Temperature Materials & Processes)
 - ETS Lab (Brayton Cycle & Other Energy Transfer Processes)

Strong Public Support!

The *Texas Department of Environmental Quality* Ordered an Independent Survey of the Residents of Andrews County, plus parts of Gaines and Ector Counties, Regarding the Siting of Nuclear Facilities.

Baselice & Assoc. Survey

How do you feel about using a nuclear reactor to generate heat, electricity, and hydrogen in Andrews County?

	Favor	Oppose	Unsure
Andrews	70%	17%	13%
Region	56%	26%	19%

Baselice & Assoc. Survey

How do you feel about enriching Uranium at the NEF in nearby Lea County New Mexico?

	Favor	Oppose	Unsure
Andrews	50%	19%	31%
Region	53%	24%	23%

Baselice & Assoc. Survey

How do you feel about processing low-level radioactive waste at the WCS facility in Andrews County?

	Favor	Oppose	Unsure
Andrews	66%	27%	8%
Region	53%	34%	13%

Baselice & Assoc. Survey

How do you feel about storing low-level radioactive waste at the WCS facility in Andrews County?

	Favor	Oppose	Unsure
Andrews	67%	26%	7%
Region	53%	35%	12%

Baselice & Assoc. Survey

How do you feel about disposing low-level radioactive waste at the WCS facility in Andrews County?

	Favor	Oppose	Unsure
Andrews	65%	26%	9%
Region	52%	35%	14%

Pre-Conceptual Design

The Team

- “Major Partners” – UT-Permian Basin, General Atomics, & UT System
- “Regional Partners” – Andrews City & County, Midland, & Odessa
- “Collaborators” – UT-Arlington, UT-Austin, UT-Dallas, UT-El Paso, Sandia National Laboratory, & Thorium Power

Pre-Conceptual Design

The Money

- >\$3 Million in ~6 Weeks
 - >\$250,000 – Individuals & Companies in West Texas
 - \$1,250,000 – Pledged by Thorium Power
 - \$500,000 – Andrews City & County EDC
 - \$500,000 – Midland EDC
 - \$500,000 – Odessa EDC

Pre-Conceptual Design

The Components

- **Technical** – Develop Design as Basis for Reasonable Estimates for total Project Cost and Schedule
- **Academic** – Determine how New Facility will be Used to create “World-Class” College of Engineering and Physics Department
- **Business** – Determine how New Facility Engineering, Licensing, Construction & Operations will be financed

Pre-Conceptual Design

Purpose of Technical Component

- Generate a Reference Design
- Develop Engineering and Licensing Cost plus Schedule
- Develop Construction Cost plus Schedule

Pre-Conceptual Design Technical Milestones

- Feb 2006 – Started PCD
- Mar 2006 – First Two Years
Engineering Estimates
- Aug 2006 – Technical Analysis
Complete
- Dec 2006– Final Report With All
Components

Project Gantt

