

“Integrated Waste Screening System Demonstration Phase I”

Submitted by:

**Battelle Energy Alliance (BEA)
and C3 Corporation**

- Original request for \$298,000; Total Project Costs \$600,000**
- Amended request for \$200,000; Total Project Costs \$400,000**

PROJECT DESCRIPTION

Significant quantities of TENORM (Technologically Enhanced Naturally Occurring Radioactive Material) are now being produced in North Dakota and other parts of the world that require new waste sorting, treatment and disposal methods. New approaches to address TENORM waste characterization and disposal from the Bakken shale need to be developed. Characterization and segregation of TENORM wastes can significantly reduce:

- the amount of waste generated that needs an engineered disposal path;**
- the risk of potential environmental and human contamination;**
- radiation exposure; and**
- disposal costs to the state and the oil and gas industry.**

The project intends to clearly demonstrate to the oil and gas industry, the State of North Dakota, insurance companies, and the United States Environmental Protection Agency that an acceptable low-cost low-manpower solution to on-site waste segregation can be made available and implemented quickly in the North Dakota oil fields utilizing existing oil field staff.

TECHNICAL REVIEWERS' RATING SUMMARY

| | | Technical Reviewer | | | <u>Average</u> |
|-------------------------------|----------------------|------------------------|------------------------|------------------------|------------------------|
| Rating | Weighting | <u>G-33-04A</u> | <u>G-33-04B</u> | <u>G-33-04C</u> | <u>Weighted</u> |
| <u>Category</u> | <u>Factor</u> | | | | <u>Score</u> |
| Objectives | 9 | 3 | 3 | 4 | 30 |
| Availability | 7 | 3 | 3 | 3 | 21 |
| Methodology | 8 | 3 | 4 | 3 | 26 |
| Contribution | 8 | 3 | 4 | 3 | 26 |
| Awareness / Background | 5 | 4 | 4 | 4 | 20 |
| Project Management | 3 | 2 | 3 | 3 | 8 |
| Equipment / Facilities | 2 | 1 | 3 | 4 | 5 |
| Value / Industry-Budget | 4 | 3 | 3 | 4 | 13 |
| Financial Match – Budget | 4 | 3 | 3 | 4 | 13 |
| <i>Average Weighted Score</i> | | 148 | 171 | 174 | 164 |
| <i>Maximum Weighted Score</i> | | | | | 250 |
| | | | | | |

TECHNICAL REVIEWER TOTALS

- ◎ G-33-04A

Average Weighted Score: 148 out of 250

FUNDING TO BE CONSIDERED

- ◎ G-33-04B

Average Weighted Score: 171 out of 250

FUND

- ◎ G-33-04C

Average Weighted Score: 174 out of 250

FUND

DIRECTOR'S RECOMMENDATIONS

Through the review process, the applicant amended the application and their proposal to request funding for Phase I (to demonstrate the Integrated Waste Screening System), while separating Phase II (to demonstrate the suitability of the X-Rok technology for successfully encapsulating Bakken shale wastes). The funding request was reduced from \$298,000 to \$200,000.

Recommend funding Phase I for \$200,000.