



U.S. DEPARTMENT OF
ENERGY

Nuclear Fuels Storage & Transportation Planning Project
Office of Fuel Cycle Technologies

Nuclear Energy

Stakeholder Tool for Assessing Radioactive Transportation (START)

**Nuclear Energy
Advisory Committee**

Washington, DC

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Overarching Objective

Utilize a decision-support tool for NE's spent fuel transportation planning:

...to evaluate transportation routing and emergency preparedness options in the waste management system

...representing a wide range of operating scenarios and performance objectives

...with an emphasis on providing flexibility.



Decision-Support Requirements

- **Cover the entire continental U.S.**
- **Represent physical and operating characteristics of freight surface transportation modes**
 - Highway
 - Rail
 - Barge
- **Include relevant proximate features (e.g., tribal lands, emergency responders, schools, environmentally-sensitive land use)**
- **Flexible, modular system architecture to support functionality, feature and data updates**
- **Leverage geographic information systems (GIS) technology**
- **Support users via web-based application with secure internet access**

Review of Existing Tools

- **Study undertaken to review capabilities of existing tools**
- **Found that none were capable of fulfilling NFST objective without major overhaul at significant expense**
- **Recommendation made to develop a new tool to leverage advances made in information technologies leading to a system that is:**
 - More comprehensive
 - More economical
 - More user-oriented
 - Easier to maintain and update
- **ESRI ArcGIS recommended as tool development platform**

START Design Considerations

- Analyze alternative routing criteria
- Include detailed transportation system attributes
- Provide emergency response information
- Include radiological risk estimates on the “front-end”
- Provide integrated system enabling user to get the “whole story”
- Create an intuitive menu structure consistent with stakeholder needs





START Support Roles

- **Development of transportation plan**
- **Route selection process and preliminary routing analysis activities**
- **180(c) policy development**
- **Data collection activities at shutdown sites**
- **Coordination with waste management data and systems integration tool development initiatives**



Next Steps



- **Make program modifications and upgrades based on beta test feedback**
- **Prepare user manual**
- **Perform case studies illustrating how START can be used to support stakeholder needs**
- **Plan START roll-out**
 - Credentialing
 - Training sessions
 - Conference presentations
 - Workshops



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