



**Federal
Railroad
Administration**

Hazardous Materials



The Southern States Energy Board

Radioactive Materials Transport Update

**Radioactive Materials Transportation
Committee Meeting
December 10-11, 2014**



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Safety Compliance Oversight Plan “SCOP”

Hazardous Materials



Tasks

- **Operational Integrity**
Train Crew, Train Dispatchers, etc.
- **Emergency Response**
**Carrier Emergency Response Plans,
Personnel Radioactive Awareness
Training**
- **Route Infrastructure Integrity**
Track Geometry, Bridge Inspection, etc.



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Safety Compliance Oversight Plan

“SCOP”

Hazardous Materials



Tasks

- **Highway-Rail Grade Crossing Safety**
**Highway-rail Grade Crossing
Warning Devices**
- **Security**
**Work with Stakeholders on Safety,
Security, Safe Havens, etc.**
- **Miscellaneous**
**Encourage FRA State Participation
Program, Investigate Complaints Along
Routes and Establish FRA SCOP Team**



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Safety Compliance Oversight Plan “SCOP”

Hazardous Materials



Most elements of the SCOP are the primary directives of the FRA’s Office of Safety. Federal Inspectors work daily in conjunction with our State Partners with regulatory oversight to assess railroad compliance through the following disciplines,

- **Operating Practices Division (OP)**
- **Track Division**
- **Motive Power & Equipment**
- **Hazardous Materials Division**
- **Highway-Rail Grade Crossing and Trespass Division**
- **Rail Infrastructure Integrity Division**



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Safety Compliance Oversight Plan “SCOP”

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The SCOP was developed because of the nature of the potential hazards associated with radioactive materials and a high degree of public awareness and concern with safety and integrity of SNF and HLRW shipments by rail. This plan will emphasize and coordinate actions between the FRA, other Federal, State, local and tribal organizations and rail carriers, in order to promote the safe and secure rail transport of these shipments on the Nation’s railroads.



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Safety Compliance Oversight Plan “SCOP”

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Because of the advancements in technology implemented throughout the rail industry since the introduction of the SCOP in 1998 the plan is being reviewed and applicable revisions will be applied in concert with these implementations.

Some examples of areas of advancement are,

- **Positive Train Control**
- **AAR S-2043 Standards**
- **Rail Routing Regulations**



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Safety Compliance Oversight Plan “SCOP”

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Update Status:

Work continues on updating the 1998 version

Slow progress primarily due to other workload associated with crude by rail issues

Plans are to have a draft update completed in 2015

FRA intends to float the draft update to the 4 State groups for comment and feedback





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Rail Routing

Hazardous Materials



Most Class I Carriers mainline routes are incorporated in the Strategic Rail Corridor Network (STRACNET), system

Railroads for National Defense (RND)

The Railroads for National Defense Program (RND) ensures the readiness capability of the national railroad network to support defense deployment and peacetime needs. The Program integrates defense rail needs into civil sector planning affecting the Nation's railroad system. Rail transportation is extremely important to DOD since our heavy and tracked vehicles will deploy by rail to seaports of embarkation. The RND Program, in conjunction with the US Federal Railroad Administration (FRA), established the Strategic Rail Corridor Network (STRACNET) to ensure DOD's minimum rail needs are identified and coordinated with appropriate transportation authorities. STRACNET is an interconnected and continuous rail line network consisting of over 36,000 miles of track serving over 130 defense installations. We work with state DOTs, the American Association of Railroads (AAR), the Surface Transportation Board (STB), the American Railway Engineering and Maintenance of Way Association (AREMA), the Railway Industrial Clearance Association (RICA), the FRA, and individual railroad companies to protect this railroad infrastructure.

Publications:

- [RND Brochure \(1,552 KB\)](#)
- [STRACNET](#)

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Rail Routing

Hazardous Materials



Components of Rail Routing from an Infrastructure Perspective

- **Site Infrastructure**
Power Plant /ISESI Site
- **Near Site Carrier Infrastructure**
Short Line Railroads
- **Intermediate Carrier Infrastructure**
Regional Carriers
- **Line Haul Infrastructure**
Class I Carriers

Note: The possibility of the final leg of the rail routing could include a Regional or Short Line Railroad also!



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Rail Routing

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Note: A possibility that Interim Storage would be near the U.S. DOE Waste Isolation Pilot Plant facility.



*S*OUTHWESTERN RAILROAD, INC.

**SOUTHWESTERN
RAILROAD**

On October 4, 2004 Southwestern Railroad began operations on a leased line of the Burlington Northern-Santa Fe between Clovis and Loving, New Mexico, including the Carlsbad and Loving industrial spurs.

The Carlsbad Division mainline begins in Clovis and ends in Carlsbad, a distance of 182 miles. The Carlsbad industrial spur runs an additional 20 miles from Carlsbad to the Intrepid Potash Mines. The Loving industrial spur runs approximately 24 miles beyond Carlsbad to the Mosaic Potash Mines.

The railroad handles approximately 30,000 carloads annually using four GP40s and six GP40-2 locomotives, under the workforce of 30 employees.

CARLSBAD DIVISION

```
graph TD
    Clovis --> Portale
    Portale --> Kenna
    Kenna --> Roswell
    Roswell --> Hagerman
    Hagerman --> Artesia
    Artesia -- 182 --> Carlsbad
    Carlsbad -- 20 --> Loving
    Carlsbad -- 24 --> Other
```



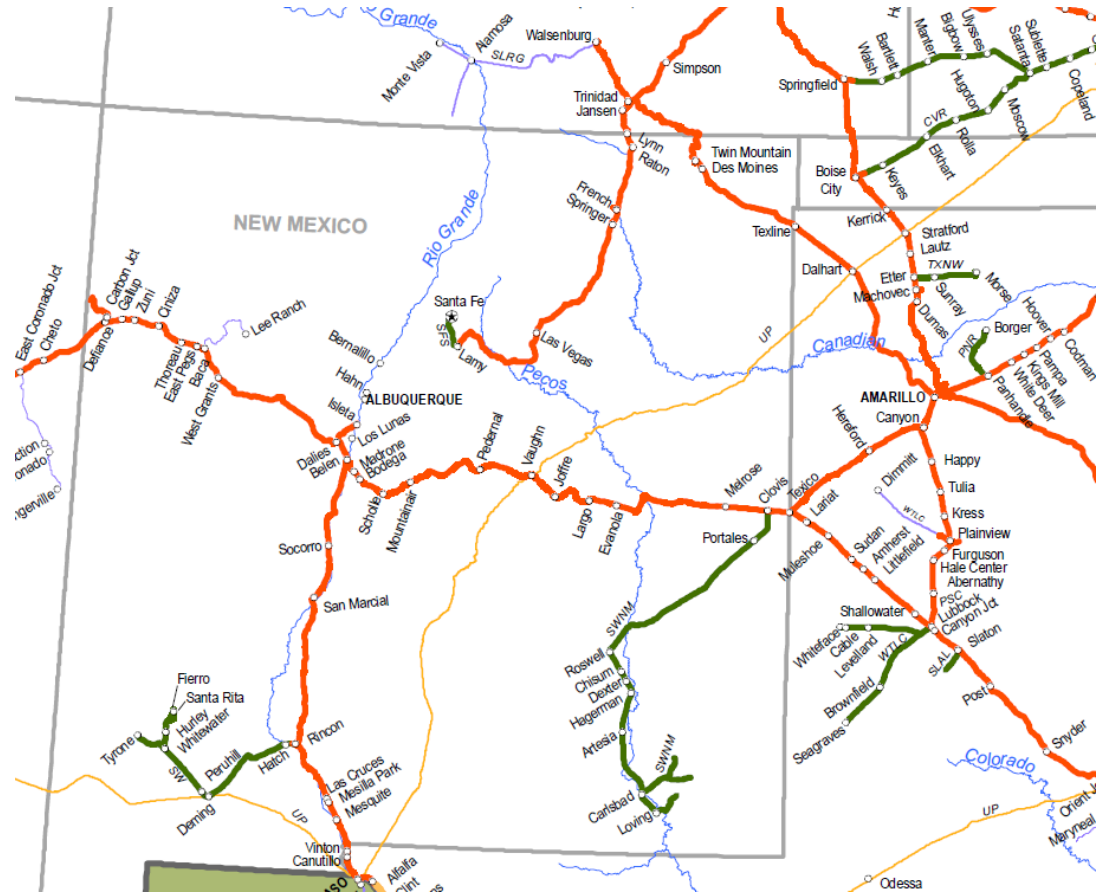
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Rail Routing

Hazardous Materials



BNSF Railroad Map of New Mexico Short Line Railroads of Region





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Shutdown Reactor Site Visits

Current Shutdown Reactor Sites Preliminary Evaluations that have been done

Hazardous Materials



Northeast

- **Connecticut Yankee**
- **Maine Yankee**
- **Yankee Rowe**

Midwest

- **Big Rock Point**
- **La Crosse**
- **Zion 1 and 2**
- **Kewaunee**

West

- **Humboldt Bay**
- **Rancho Seco**
- **Trojan**



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Shutdown Reactor Site Visits

Hazardous Materials



Near Future Shutdown Reactor Sites Preliminary Evaluations

Northeast - **will not be part of initial evaluations**

- *Oyster Creek* - after current license expires
- *Vermont Yankee* - shutdown has been announced

South

- **Crystal River (FL) - 2015**

West

- **San Onofre (CA) - 2015**



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Shutdown Reactor Site Visits

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One of the Team's Preliminary Evaluations

Site Inventory

- **Burnup, Enrichment, Age, Number of Assemblies, MTHM (Metric Tons Heavy Metal), Fuel Cladding, Condition of Fuel, etc.**
- **Dry Storage Cask Design and Manufacturer**
- **Number of Storage Casks at Site**
 - **Number of Spent Fuel Storage Casks**
 - **Number of Greater Than Class C (GTCC) Storage Casks**





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Shutdown Reactor Site Visits

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Rail Transportation Evaluations

Site Infrastructure

- **Rail Service**
- **Rail Infrastructure Condition**
- **Rail Car Capacities**
- **Rail Car Loading Capabilities**



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Shutdown Reactor Site Visits

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Rail Transportation Evaluations

Near Site Carrier Infrastructure

- **Class I Railroad**
- **Regional Railroad**
- **Short Line Railroad**





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Shutdown Reactor Site Visits

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Midwest Site Visits

Zion 1 and 2

- **Class I service to facility - Union Pacific Railroad**
- **Rebuilt facility rail system**
- **LSA/SCO shipments during decommissioning**





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Shutdown Reactor Site Visits

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Midwest Site Visits

Zion 1 and 2

Four Plant Leads - 100 lbs. Rail





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Shutdown Reactor Site Visits

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Midwest Site Visits

Zion 1 and 2

Concrete Ties on Facility Lead





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Shutdown Reactor Site Visits

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Midwest Site Visits

Zion 1 and 2

Union Pacific Railroad – Mainline Switch





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Shutdown Reactor Site Visits

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Midwest Site Visits

La Crosse

- **Class I service to facility – BNSF Railway Company**
- **Two rail car siding**
- **Abandoned facility rail system**





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Shutdown Reactor Site Visits

Hazardous Materials

Midwest Site Visits

La Crosse

BNSF - Mainline Switch





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Shutdown Reactor Site Visits

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Midwest Site Visits

La Crosse

Two rail car siding (inside gate)





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Shutdown Reactor Site Visits

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Midwest Site Visits

Big Rock Point

- **No direct rail service to facility**
- **Heavy-Haul (two possible sites)**

Great Lakes Central Railroad - 13 miles

Lake State Railway - 50 miles





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Shutdown Reactor Site Visits

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Midwest Site Visits

Big Rock Point

Great Lakes Central Railroad - Petoskey, MI

FRA Class 1 Track





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Shutdown Reactor Site Visits

Hazardous Materials

Midwest Site Visits

Big Rock Point

**Great Lakes Central Railroad – Petoskey, MI
Siding**





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Shutdown Reactor Site Visits

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Midwest Site Visits

Big Rock Point

Lake State Railway - Gaylord, MI

FRA Class 2 Track





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Reciprocal Rail Inspections

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Created to apply CVSA Level VI procedures to rail applicability



- **Achieve maximum reciprocity along rail route**
- **Utilizing FRA State Rail Safety Participation Program**
- **Point of Origin, Enroute and Final Destination Inspections**



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Reciprocal Rail Inspections

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Potential Pilot Initiatives

- **USEC – Paducah Facility (pending congressional funding)**
- **Zion 1 and 2 – (ongoing decommissioning project)**
- ***Unit trains of either Crude Oil or Ethanol – (for mechanical not radiological inspection process)***



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Other Projects

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- **Dedicated Train Rulemaking - on hold pending progress on actual movements of SNF and HLRW by rail**
- **Positive Train Control (PTC)**
- ***New regulations in process on crude by rail shipments that could possibly have a bearing on movement of SNF and HLRW by rail in some aspects.***



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Reciprocal Rail Inspections

Hazardous Materials



Questions?