

*Private Fuel Storage, L.L.C.*

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*John L. Donnell, P.E., Project Director*

Mr. Glenn Carpenter, District Manager  
Bureau of Land Management  
2370 South 2300 West  
Salt Lake City, UT 84119

February 19, 1999

Dear Mr. Carpenter,

**PRELIMINARY PLAN OF DEVELOPMENT  
PRIVATE FUEL STORAGE FACILITY  
PRIVATE FUEL STORAGE L.L.C.**

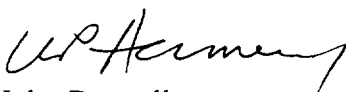
- References: 1) PFS Letter, Parkyn to Carpenter, Transmittal of Application for Transportation on Federal Lands, dated August 28, 1998  
2) BLM letter, Carpenter to Donnell, #2800, U-76985, U-76986, dated January 28, 1999

Private Fuel Storage L.L.C. submitted right-of-way applications for the PFS Low corridor rail line (U-76985) and for the PFS Intermodal Transfer Point (U-76986) - the two transportation options for the Private Fuel Storage Facility (Reference 1). In support of these applications, enclosed are preliminary Plans of Development.

The PFS is submitting the PODs in accordance with our January 21, 1999 discussions and your follow-up letter (Reference 2). A copy of the PODs was also sent to the NRC in response to EIS request for additional information. A copy of our EIS RAI responses are enclosed for your information.

As preliminary design work and environmental studies are completed, PFS will amend the PODs accordingly.

If you have any questions, please contact me at 303-741-7009.

  
for John Donnell  
Project Director, L.L.C.

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Mr. Glenn Carpenter

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Copy to: Mr. Leon Bear, Skull Valley Band of Goshute Indians

-Mr. Mark Delligatti, NRC

Mr. Jay Silberg, Shaw Pittman

Mr. John Donnell, PFSLLC

Ms. Denise Chancellor, State of Utah

Mr. David Allison, BIA

Ms. Patricia Winmill, Parsons Behle

Ms. Margaret Swimmer, Hall Estill

Mr. John Parkyn, PFSLLC

**PRELIMINARY PLAN OF DEVELOPMENT  
Right of Way Application U-76985  
Private Fuel Storage L.L.C. - Rail Line**

The following is a preliminary Plan of Development ("POD") for the construction of a rail line along proposed right of way U-76985 (the "ROW"). The preliminary POD is being submitted in advance of the completion of certain surveys, analyses and designs that are necessary to finalize the POD, in order to apprise BLM of the general outline of Private Fuel Storage (PFS) proposed rail line POD. PFS will incorporate additional information as it becomes available in subsequent revisions to the POD. In addition, other matters discussed below may be refined, amended or expanded upon in subsequent POD revisions.

**1. PURPOSE AND NEED FOR THE FACILITY**

1.1 The Facility. ROW U-76985 will be used to construct a single track, railroad line from the Union Pacific mainline at Low, Utah to the Skull Valley Indian Reservation across public lands administered by the BLM.

1.2 Purpose. The rail line will be used to transport sealed shipping casks of spent nuclear fuel to the Private Fuel Storage Facility (the "Storage Facility"), a temporary spent commercial nuclear fuel storage facility proposed to be located on the Skull Valley Indian Reservation. The nuclear power industry's critical need for a temporary spent fuel storage facility is described in detail in the ROW Application at paragraph 15 and in the Environmental Report (the "ER"), submitted as part of the Nuclear Regulatory Commission's (the "NRC") licensing process, a copy of which has been provided to the BLM, at Sections 1.1, "Background," and 1.2, "Need For The Facility." The design and use of the Storage Facility is described in the ER, in Chapter 3, "The Facility."

1.3 Need for the ROW. Because most of the land in Skull Valley is public land administered by the BLM, it is necessary to use public land in order to provide rail access between the Union Pacific mainline and the Storage Facility located on the reservation.

**2. DESIGN CRITERIA**

2.1 ROW Location. Figure 2.1-1 and drawings 0599602-EY-10, 11, 12, & 13, attached to the ROW application, depict the general route of the proposed ROW. In general, the rail line will traverse Range R9W between Township T1N and T5S. Environmental surveys have been conducted within a ½ mile corridor along the general route depicted in the drawings. Future aerial surveys and constructability analyses will be conducted to narrow the corridor to the final alignment profile. When the surveys and analyses are complete, the POD will be revised to reflect a more definitive description of the route.

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2.2 Right-Of-Way Size. The ROW is approximately 32 miles long and is 200 feet wide.

2.3 Width Of Rail Bed. The rail bed will be 40 feet wide, with the remaining portion of the ROW used, as necessary, for cut and fills, which will be revegetated as described in Section 5.11.3. The rail bed will be composed of the standard 4' 8 1/2" gauge railroad track, 17 ft wide layer of ballast material, 34 ft wide layer of sub ballast material, and 3 ft wide cleared area each side of the sub ballast.

2.4 Siding. A siding connecting the proposed rail line to the Union Pacific mainline will be constructed near Low, Utah. The siding will consist of 3 siding tracks spaced 20 feet apart. The total length of the siding will be approximately 6000 feet. The mainline is slightly depressed in this area such that the siding will require some excavation to connect the new line to the existing mainline.

2.5 Maximum Grade Of Rail Bed. Considering the ballast and sub ballast, the top of the rail will typically be approximately 4' 6" above the surrounding terrain.

2.6 Ballast. The ballast and sub ballast will be composed of crushed gravel or rock, in conformance with applicable railroad standards, and obtained from an existing commercial gravel pit in the area.

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2.8 Cut/Fill Slope Ratios. Except for the area near the Low siding, which will require some excavation, the rail alignment crosses relatively flat terrain, and accordingly, relatively few cuts and fills will be necessary. When the preliminary design work for the rail line is completed, PFS will amend the POD to include the cut and fill ratios, the locations of the necessary cuts and fills and other pertinent details.

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constructed so as not to impair travel on the roads. When the surveys are completed, PFS will amend the POD to identify the location of each of these crossings. Because the roads are rarely traveled, the terrain is flat, and PFS's trains will, be infrequent and travel at approximately 20 miles per hour, safety concerns do not require installation of safety devices such as lights or barriers.

**2.11 Fences.** The rail line will not be fenced, which will limit the potential effects on wildlife and grazing resources in the area. Because of the low speeds and infrequency of the trains and the visibility offered by the flat terrain along the rail corridor, safety concerns do not require fencing.

**2.12 Access.** PFS does not propose to construct an access road along the rail line in order to avoid impacts to the area that might otherwise arise from the public's use of such a road to access the interior of Skull Valley. As described below in Section 6, neither maintenance requirements nor fire concerns require construction of an access road.

**2.13 Design Drawings.** When environmental and aerial surveys, constructability analyses and preliminary design of the rail line are complete, PFS will amend the POD to include appropriate design drawings, including the following:

- Centerline Survey Plat.
- Plan And Profile Sheets.
- Typical Rail Bed Cross-Sections.
- Typical Crossing Details.
- Typical Culvert/Bridge Details.
- Typical Cut and Fill Diagrams.

### 3. GOVERNMENTAL AGENCY INVOLVEMENT

Construction of the rail line may require several state permits including a stream alteration permit under Utah Code Ann. § 73-3-29 and a general storm water construction permit under Utah Code Ann. § 19-5-107. Details of these permits are discussed in Chapter 9 of the ER.

#### 4. RESOURCE VALUES AND ENVIRONMENTAL CONCERNS

4.1 Compatibility With Land Use Plans. Because the rail line is not located in an existing BLM transportation corridor, an amendment to the Pony Express Resource Management Plan may be necessary.

#### 4.2 Impact on Resource Values.

4.2.1 Air Quality. The overall impacts on air quality from construction and operation will be minor and limited to the general vicinity of the corridor. Any impacts will mainly be associated with emissions of fugitive dust from construction activities and from locomotive emissions during cask transport operations. No long-term impacts on the local meteorology/climatology will result from these activities. See ER Sections 2.4.2.5 "Air Quality" and 4.4.3 "Effects on Air Quality."

4.2.2 Noise. Since the distance between the proposed rail line and residences along Skull Valley Road is 5 to 10 miles, construction and operation noise is not expected to be very audible. Sound level predictions for the locomotive and rail cars delivering casks to the site indicate that the maximum noise levels would be 31 dBA at Skull Valley Road, 26 dBA near Eight Mile Spring Road, and 19 dBA at the intersection of I-80 and Skull Valley Road. These levels are low and will have a minimal impact on valley residences and mountain wilderness study areas. See ER Sections 2.8 "Noise and Traffic" and 4.4.7 "Effects of Noise and Traffic."

4.2.3 Geologic Hazards. The rail line passes through relatively flat terrain or in areas where there are no prominent geological formations. It is anticipated that geological hazards will not be an issue. The geological characteristics of the surrounding area is described in ER Section 2.6 "Geology and Seismology."

4.2.4 Mineral and Energy Resources. No mineral resources have been identified along the rail line corridor. Therefore, no impact to this resource is expected from the construction of a rail line. See ER Section 4.4.5 "Effects on Mineral Resources."

4.2.5 Paleontological Resources and Cultural Resources. Prior to construction of the rail line, a Class III cultural resource survey will be performed in the area potentially affected by the rail line to identify paleontological or cultural resources that could exist on the ROW. Based on a Class I cultural resource inventory for the rail line conducted in 1998 that included a one mile wide study area centered over the proposed rail line,

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there is only a low probability of encountering archeological or historical sites. There is the potential for impacts to historic trails that may cross the rail line. The National Park Service is currently preparing a Comprehensive Management Plan (CMP) for Historic Trails. The rail line will be reviewed for consistency with the CMP, how the rail line would fit into the limits of acceptable change for the trails, and implement any mitigation measures as needed. See ER Sections 2.9.1 "Cultural Resources" and 4.4.8 "Effects on Regional Historical, Cultural, Scenic, and Natural Features."

**4.2.6 Soil Resources.** Cut and fills will be balanced to minimize the need for additional fill materials. Additional fill material from areas beyond the ROW is not expected. Topsoil for areas excavated will be obtained from stockpiles of topsoil that was excavated along rail bed and cut and fill areas.

**4.2.7 Water Resources.** There are no existing surface water bodies in the rail line corridor. Ground water is over 100 ft below the surface. Therefore it is not expected that the rail line will have any impact on water resources. See ER Sections 2.3.3.3 "Ecological Resources Along Low Corridor -- Aquatic Resources"; 2.5 "Hydrology" and 4.4.4 "Effects on Hydrological Resources."

**4.2.8 Vegetation Resources.** Construction of the rail line will temporarily disturb approximately 776 acres of BLM-managed land of which 155 acres will be disturbed for the life of the PFSF. Clearing activities will temporarily remove greasewood and desert shrub/saltbrush. However, only land within the 40-foot wide rail line corridor (155 acres) will be permanently cleared while approximately 621 acres will be revegetated after construction. This small amount of vegetation is minor compared to the over 1 million acres of desert shrub/saltbrush within Tooele County. There are also no unique vegetation habitat features in areas proposed for vegetation removal. See ER Sections 2.3.3.1 "Ecological Resources Along Low Corridor -- Vegetation" and 4.4.2 "Effects on Ecological Resources."

**4.2.9 Wildlife Resources.** The level of impact to the local population of wildlife from construction and operation is expected to be minimal. Construction activities will temporarily disturb resident wildlife along the rail line. Larger mammals will temporarily avoid the construction area, but likely return following the completion of construction. The rail line has the potential of interrupting wildlife travel across the rail line briefly during construction but will have little effect once in operation since it will not be fenced. See ER Sections 2.3.3.2 "Wildlife" and 4.4.2 "Effects on Ecological Resources."

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4.2.10 Threatened and Endangered Species Resources. Ecological surveys indicate that there are no threatened and endangered species located within the rail line corridor, except for transient, infrequent occurrences by Bald Eagles and Peregrine Falcons. These should not be adversely affected by construction activities, since the construction activities are temporary. See ER Section 2.3.3.4 "Threatened and Endangered Species."

4.2.11 Visual Resources. Due to the low profile of the rail line, the rail line will not be obviously visible from most locations in the valley. The rail line will be apparent near I-80 and from high elevations in the Cedar Mountains. The visual change will be similar with other developments in the area, such as I-80, the RR mainline, and Skull Valley Road. Because of low recreational use of the area, the impact is not expected to be significant. See ER Sections 2.9.2 "Visual and Scenic Resources" and 4.4.8 "Effects on Regional Historical, Cultural, Scenic and Natural Features."

4.2.12 BLM Improvements. None known.

4.2.13 Recreation and Wilderness Resources. Impacts to the limited recreational uses in the area are discussed in the ER at Sections 2.2.2 "Land Use" and 4.4.1, "Effects on Geography, Land Use, and Demography." The ROW alignment is not located within any wilderness area, wilderness study area or any governmental wilderness proposal. The BLM's Wilderness Reinventory, released February 4, 1999, concluded that the nearby Cedar Mountains Wilderness Study Area (the "WSA") has wilderness characteristics and that six additional Inventory Units adjacent to the WSA enhance the wilderness values of the WSA. The eastern boundaries of two of these units, Units 2 and 3, are located between approximately 1.25 to 2.5 miles west of the proposed ROW corridor. The proposed rail line is located approximately 3.5 miles east of the closest WSA boundary. The rail line, like the Skull Valley Road, I-80 and other manmade features in the Skull Valley, will likely be visible from some vantage points within the Cedar Mountain WSA and Inventory Units, as well as from certain vantage points in the Deseret Peak Wilderness Area and the Stansbury Mountain WSA located in the Stansbury Mountains adjacent to the eastern side of the valley. Construction of the rail line is consistent with BLM's visual modification standard VRM IV established for the area, which allows activities resulting in major modifications to the existing landscape, which may dominate the view and be a major focal point for the viewer. It is also possible that engine noise may be audible from certain locations within some of the WSAs or Inventory Units. The noise and visual impacts of the rail line are discussed generally in the ER at Sections 2.9.2, 4.4.7 "Effects of Noise and Traffic" and 4.4.8 "Effects on Regional Historical, Cultural, Scenic, and Natural Features".



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4.2.14 Socioeconomic Concerns. No adverse impacts on socioeconomic resources are anticipated. Minor short-term employment will result from construction activities associated with the rail line. These activities will utilize a local labor force commuting daily to the project area and will therefore not induce relocation of families and associated impacts on local government services. See ER Sections 2.2 "Geography, Land Use, and Demography" and 2.7 "Socioeconomics."

4.2.15 Environmental Justice. The environmental justice issues associated with PFS's proposed Storage Site are discussed in the ER at Section 2.7.3. "Environmental Justice." The rail ROW will not pose environmental justice issues beyond those associated with the Storage Site itself, except that construction and operation of the rail line will contribute to the additional employment opportunities discussed in ER Section 2.7.3.

4.2.16 Flood Plains. The ROW corridor is not located within a flood plain. See ER Section 2.5.2. "Floods."

4.2.17 Proximity to Hazardous Waste Sites. Low is located approximately 7 miles east of the Aptus hazardous waste incinerator, the nearest hazardous waste site. Other hazardous waste sites are the Envirocare Mixed Waste and Low-level Radioactive Waste Landfill (15 miles) and the Grassey mountain hazardous Waste Storage Facility (16 miles). There are no known hazardous waste sites in the vicinity of the rail corridor.

4.2.18 Grazing. The rail line crosses the Eightmile and Black Knoll Pastures which are part of the Skull Valley grazing allotment. Construction activities related to the rail line will temporarily disturb resident livestock and cause them to avoid the construction area. Operation of the rail line is not expected to adversely affect livestock grazing since the ROW will not be fenced and livestock will be able to freely cross the rail line accessing rangeland on either side. Due to the infrequent number of railroad trips (1-2 round trips/week) and the slow train speed (20 mph), collisions with livestock are not anticipated. See ER Sections 2.2.2 "Land Use" and 4.4.1, "Effects on Geography, Land Use and Demography."

## 5. CONSTRUCTION

5.1 Construction Schedule. Construction of the line is scheduled to begin in the fall of 2000 and last about 14 months.

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5.2 Temporary Use Permit. A temporary use area of 100 feet, 50 feet on each side of the 200 foot wide permanent ROW, will be needed for topsoil stockpiles and other construction uses. Those areas of the temporary use area used for soil stockpiles will be cleared of vegetation. Use of these additional areas will be needed during the 14-month construction period.

5.3 Access to and Along ROW During Construction. Access to the ROW will be from the established roads in Skull Valley and along the rail corridor itself.

5.4 Equipment Requirements. Construction of the rail line will require the use of several pieces of heavy equipment including scrapers, bulldozers, front end loaders, dump trucks, graders, compactors, rail layers, etc. When construction details are finalized, PFS will amend the POD to provide equipment requirements.

5.5 Work Force Requirements. See ER Tables 4.1-1, "Estimated Construction Labor Force Phase 1 Activities," for a list of construction workers expected to construct the PFSF. Construction of the rail line will likely require a General Superintendent, Equipment Operators, General Laborers, and a Construction Engineer. When construction detail are finalized, PFS will amend the POD to provide a detailed work force list.

5.6 Flagging and Staking. Prior to construction, a survey crew will stake the rail centerline, the boundaries of the 200-foot ROW, and the temporary use areas.

5.7 Clearing and Grading of the Right-of-Way.

5.7.1 Vegetation Clearance. Clearing will consist of the removal and disposal of vegetation along the 40 foot wide rail bed, at cut and fill areas, and soil stockpile areas within designated stockpile areas of the temporary use areas.

5.7.2 Topsoil Saving And Stockpiles. Where topsoil exists, the original ground surface will be excavated along a 10 foot wide strip of land along the rail bed and at cut and fill areas to a depth of approximately 6 inches and the topsoil will be stockpiled. Stockpiles will be used for final surfacing to support vegetation growth. Stockpiles slopes will be maintained in a stable condition.

5.7.3 Disposal Of Woody Vegetation. Woody vegetation will be shredded and scattered in place.

5.8 Earthwork

5.8.1 Cut And Fill Areas. Cuts and fills of the existing grade will be made to establish the new rail profile grade by mechanical means i.e., scrapers,

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bulldozers, graders, etc. Explosive charges will not be used unless required for the soil conditions.

5.8.2 Borrow Material and Ballast Sources. Fill material for cuts will be obtained from nearby cuts. The project will balanced cut and fills in order to minimize the need for additional fill material. Ballast will be obtained outside of the ROW from an existing commercial gravel pit in the area.

5.8.3 Preparation of Railroad Bed. The railroad sub bed will be proof-rolled and backfilled with one foot of compacted fill material (excavated or imported). A minimum of 12 inches of sub-ballast will be placed on the prepared surface.

5.8.4 Soil Erosion And Water Pollution Control Measures. Erosion and water pollution control measures will include minimizing vegetation removal, construction of silt fencing and hay bales to stabilize slopes, temporary ditches and berms to divert stormwater away from existing drainages, maintenance of soil stockpiles, and limiting the areas of construction activities.

5.8.5 Disposal Of Unuseable Excavated Materials. Since the cut and fills will be balanced, it is expected that the quantities of unuseable excavated materials will be nonexistent or minimal. Specific plans for disposal of any excess excavated material have not been determined at this time.

5.9 Rail Installation. The ties and rail will be laid on top of the ballast and a rail construction machine will travel along the previously laid rail and install the remaining six inches of crushed gravel or rock ballast beneath and around the wooden ties. The construction machine will also attach the rails to the ties using spikes and tie plates. The rail will be spliced with bolted joint plates for ease of assembly.

5.10 Construction Procedures. When design of the rail line is completed, PFS will amend the POD to include a construction plan addressing the following issues:

- Contingency Planning.
- Dust Abatement.
- Traffic Control Plan for Road Crossings.
- Safety Plan for Employees and Contractors.
- Waste Disposal.
- Fire Prevention and Suppression Plan.

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5.11 Stabilization, Rehabilitation and Revegetation.

5.11.1 Recontouring. After construction, all unoccupied disturbed areas will be graded to a stable contour that will support adequate surface water drainage patterns in the area.

5.11.2 Erosion Control Structures. Permanent erosion control measures will be maintained through the use of riprap and geotextile fabrics at culvert exits to prevent soil scouring and revegetating of cleared and excavated areas. When the design of specific erosion control structures is completed, PFS will amend the POD to identify the location and design of the structures.

5.11.3 Soil Replacement. Topsoil will be spread uniformly at approximately 2 inches thick on exposed cut and fill surfaces. Topsoil will consist of previously excavated stockpiled material.

5.11.4 Seeding Specifications. Seeding will be placed on topsoil by hydroseeding. Seeding will consist of mixing and applying an indigenous grass seed mixture, commercial fertilizer and stabilizing emulsion, or any combination thereof, with fiber and water. The indigenous grass seed mixture will consist of a proportional blend of the predominate grasses in the area. Only areas where grasses existed prior to excavation will be seeded.

6. OPERATION AND MAINTENANCE OF THE RAIL LINE

6.1 Level of use. During the initial years of operation until the Storage Facility reaches its capacity of 4000 stored canisters, it is expected that between 100 to 200 transportation casks will be shipped to the site each year resulting in one to two round trips being made on average each week. At the end of the Storage Facility's life (no more than 40 years), the 4000 canisters will be shipped from the site, over an indeterminate period of time, to a permanent storage facility. See details in ER Section 3.3, "Facility Operation." Each rail shipment will consist of 3 – 6 transportation casks. The largest train is expected to consist of two 1,500 horsepower locomotives with six cars containing casks, seven empty buffer cars, and one security car. The maximum speed of the train is expected to be 20 miles an hour. See ER Section 1.2, "Need For The Facility," for a more detailed discussion of the anticipated shipment volumes.

6.2 Access. PFS will use existing roads in the area and railroad vehicles along the track to access various portions of the rail line for maintenance purposes.

6.3 Inspection and Maintenance Requirements. Regular inspections and maintenance will be performed on the rail line as part of the PFS operations.

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Inspection and maintenance activities will be performed to ensure against rail damage, missing or loose bolts on rail joint plates, loose spikes, tie deterioration and settlement, ballast placement, and improper drainage.

6.3.1 Snow removal. Snow removal will not normally be conducted on the rail line.

6.3.2 Noxious Weed Control. Chemical herbicide will be used to control noxious weeds to keep the 40 foot wide rail corridor clear of vegetation and to control noxious weeds on newly seeded areas until grasses are established.

6.4 Fire Prevention and Suppression Plan. PFS will be using spark arrestors on engine stacks and special truck bearings that are designed to eliminate sparks that are typically associated with railroads. The 34 feet of ballast and clearing the 40-foot right of way of vegetation will further reduce the potential for fires. In addition, should a fire occur, because the rail spur will be constructed close to grade and crossings will be constructed approximately every mile, emergency fire vehicles will have access along the rail bed. Accordingly, the rail line will not significantly increase fire hazards in the area. No additional fire suppression is believed to be necessary.

6.5 Safety Plan. A Safety Analysis Report (SAR) addresses the operation and maintenance of the spent nuclear fuel casks. The SAR is required as part of the Nuclear Regulatory licensing process. A copy of the SAR can be accessed from the NRC or at the public access reading room at the Tooele County Library or University of Utah Library.

6.6 Public Access to ROW. Because the rail line will not be fenced, the public will have access to the ROW.

## 7. TERMINATION AND RESTORATION

7.1 Removal of facilities. At the end of the PFSF life, the rail, ballast, culverts and bridges will be removed from the area.

7.2 Reclamation of disturbed areas. After the rail and ballast are removed, the portions of the ROW affected by rail and ballast will be recontoured to stable contours that support natural drainage conditions. Disturbed areas will be revegetated as described above in paragraphs 5.11.4.

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constructed so as not to impair travel on the roads. When the surveys are completed, PFS will amend the POD to identify the location of each of these crossings. Because the roads are rarely traveled, the terrain is flat, and PFS's trains will, be infrequent and travel at approximately 20 miles per hour, safety concerns do not require installation of safety devices such as lights or barriers.

2.11 Fences. The rail line will not be fenced, which will limit the potential effects on wildlife and grazing resources in the area. Because of the low speeds and infrequency of the trains and the visibility offered by the flat terrain along the rail corridor, safety concerns do not require fencing.

2.12 Access. PFS does not propose to construct an access road along the rail line in order to avoid impacts to the area that might otherwise arise from the public's use of such a road to access the interior of Skull Valley. As described below in Section 6, neither maintenance requirements nor fire concerns require construction of an access road.

2.13 Design Drawings. When environmental and aerial surveys, constructability analyses and preliminary design of the rail line are complete, PFS will amend the POD to include appropriate design drawings, including the following:

- Centerline Survey Plat.
- Plan And Profile Sheets.
- Typical Rail Bed Cross-Sections.
- Typical Crossing Details.
- Typical Culvert/Bridge Details.
- Typical Cut and Fill Diagrams.

### 3. GOVERNMENTAL AGENCY INVOLVEMENT

Construction of the rail line may require several state permits including a stream alteration permit under Utah Code Ann. § 73-3-29 and a general storm water construction permit under Utah Code Ann. § 19-5-107. Details of these permits are discussed in Chapter 9 of the ER.



#### 4. RESOURCE VALUES AND ENVIRONMENTAL CONCERNS

4.1 Compatibility With Land Use Plans. Because the rail line is not located in an existing BLM transportation corridor, an amendment to the Pony Express Resource Management Plan may be necessary.

#### 4.2 Impact on Resource Values.

4.2.1 Air Quality. The overall impacts on air quality from construction and operation will be minor and limited to the general vicinity of the corridor. Any impacts will mainly be associated with emissions of fugitive dust from construction activities and from locomotive emissions during cask transport operations. No long-term impacts on the local meteorology/climatology will result from these activities. See ER Sections 2.4.2.5 "Air Quality" and 4.4.3 "Effects on Air Quality."

4.2.2 Noise. Since the distance between the proposed rail line and residences along Skull Valley Road is 5 to 10 miles, construction and operation noise is not expected to be very audible. Sound level predictions for the locomotive and rail cars delivering casks to the site indicate that the maximum noise levels would be 31 dBA at Skull Valley Road, 26 dBA near Eight Mile Spring Road, and 19 dBA at the intersection of I-80 and Skull Valley Road. These levels are low and will have a minimal impact on valley residences and mountain wilderness study areas. See ER Sections 2.8 "Noise and Traffic" and 4.4.7 "Effects of Noise and Traffic."

4.2.3 Geologic Hazards. The rail line passes through relatively flat terrain or in areas where there are no prominent geological formations. It is anticipated that geological hazards will not be an issue. The geological characteristics of the surrounding area is described in ER Section 2.6 "Geology and Seismology."

4.2.4 Mineral and Energy Resources. No mineral resources have been identified along the rail line corridor. Therefore, no impact to this resource is expected from the construction of a rail line. See ER Section 4.4.5 "Effects on Mineral Resources."

4.2.5 Paleontological Resources and Cultural Resources. Prior to construction of the rail line, a Class III cultural resource survey will be performed in the area potentially affected by the rail line to identify paleontological or cultural resources that could exist on the ROW. Based on a Class I cultural resource inventory for the rail line conducted in 1998 that included a one mile wide study area centered over the proposed rail line,

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there is only a low probability of encountering archeological or historical sites. There is the potential for impacts to historic trails that may cross the rail line. The National Park Service is currently preparing a Comprehensive Management Plan (CMP) for Historic Trails. The rail line will be reviewed for consistency with the CMP, how the rail line would fit into the limits of acceptable change for the trails, and implement any mitigation measures as needed. See ER Sections 2.9.1 "Cultural Resources" and 4.4.8 "Effects on Regional Historical, Cultural, Scenic, and Natural Features."

**4.2.6 Soil Resources.** Cut and fills will be balanced to minimize the need for additional fill materials. Additional fill material from areas beyond the ROW is not expected. Topsoil for areas excavated will be obtained from stockpiles of topsoil that was excavated along rail bed and cut and fill areas.

**4.2.7 Water Resources.** There are no existing surface water bodies in the rail line corridor. Ground water is over 100 ft below the surface. Therefore it is not expected that the rail line will have any impact on water resources. See ER Sections 2.3.3.3 "Ecological Resources Along Low Corridor -- Aquatic Resources"; 2.5 "Hydrology" and 4.4.4 "Effects on Hydrological Resources."

**4.2.8 Vegetation Resources.** Construction of the rail line will temporarily disturb approximately 776 acres of BLM-managed land of which 155 acres will be disturbed for the life of the PFSF. Clearing activities will temporarily remove greasewood and desert shrub/saltbrush. However, only land within the 40-foot wide rail line corridor (155 acres) will be permanently cleared while approximately 621 acres will be revegetated after construction. This small amount of vegetation is minor compared to the over 1 million acres of desert shrub/saltbrush within Tooele County. There are also no unique vegetation habitat features in areas proposed for vegetation removal. See ER Sections 2.3.3.1 "Ecological Resources Along Low Corridor -- Vegetation" and 4.4.2 "Effects on Ecological Resources."

**4.2.9 Wildlife Resources.** The level of impact to the local population of wildlife from construction and operation is expected to be minimal. Construction activities will temporarily disturb resident wildlife along the rail line. Larger mammals will temporarily avoid the construction area, but likely return following the completion of construction. The rail line has the potential of interrupting wildlife travel across the rail line briefly during construction but will have little effect once in operation since it will not be fenced. See ER Sections 2.3.3.2 "Wildlife" and 4.4.2 "Effects on Ecological Resources."

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4.2.10 Threatened and Endangered Species Resources. Ecological surveys indicate that there are no threatened and endangered species located within the rail line corridor, except for transient, infrequent occurrences by Bald Eagles and Peregrine Falcons. These should not be adversely affected by construction activities, since the construction activities are temporary. See ER Section 2.3.3.4 "Threatened and Endangered Species."

4.2.11 Visual Resources. Due to the low profile of the rail line, the rail line will not be obviously visible from most locations in the valley. The rail line will be apparent near I-80 and from high elevations in the Cedar Mountains. The visual change will be similar with other developments in the area, such as I-80, the RR mainline, and Skull Valley Road. Because of low recreational use of the area, the impact is not expected to be significant. See ER Sections 2.9.2 "Visual and Scenic Resources" and 4.4.8 "Effects on Regional Historical, Cultural, Scenic and Natural Features."

4.2.12 BLM Improvements. None known.

4.2.13 Recreation and Wilderness Resources. Impacts to the limited recreational uses in the area are discussed in the ER at Sections 2.2.2 "Land Use" and 4.4.1, "Effects on Geography, Land Use, and Demography." The ROW alignment is not located within any wilderness area, wilderness study area or any governmental wilderness proposal. The BLM's Wilderness Reinventory, released February 4, 1999, concluded that the nearby Cedar Mountains Wilderness Study Area (the "WSA") has wilderness characteristics and that six additional Inventory Units adjacent to the WSA enhance the wilderness values of the WSA. The eastern boundaries of two of these units, Units 2 and 3, are located between approximately 1.25 to 2.5 miles west of the proposed ROW corridor. The proposed rail line is located approximately 3.5 miles east of the closest WSA boundary. The rail line, like the Skull Valley Road, I-80 and other manmade features in the Skull Valley, will likely be visible from some vantage points within the Cedar Mountain WSA and Inventory Units, as well as from certain vantage points in the Deseret Peak Wilderness Area and the Stansbury Mountain WSA located in the Stansbury Mountains adjacent to the eastern side of the valley. Construction of the rail line is consistent with BLM's visual modification standard VRM IV established for the area, which allows activities resulting in major modifications to the existing landscape, which may dominate the view and be a major focal point for the viewer. It is also possible that engine noise may be audible from certain locations within some of the WSAs or Inventory Units. The noise and visual impacts of the rail line are discussed generally in the ER at Sections 2.9.2, 4.4.7 "Effects of Noise and Traffic" and 4.4.8 "Effects on Regional Historical, Cultural, Scenic, and Natural Features".

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4.2.14 Socioeconomic Concerns. No adverse impacts on socioeconomic resources are anticipated. Minor short-term employment will result from construction activities associated with the rail line. These activities will utilize a local labor force commuting daily to the project area and will therefore not induce relocation of families and associated impacts on local government services. See ER Sections 2.2 "Geography, Land Use, and Demography" and 2.7 "Socioeconomics."

4.2.15 Environmental Justice. The environmental justice issues associated with PFS's proposed Storage Site are discussed in the ER at Section 2.7.3. "Environmental Justice." The rail ROW will not pose environmental justice issues beyond those associated with the Storage Site itself, except that construction and operation of the rail line will contribute to the additional employment opportunities discussed in ER Section 2.7.3.

4.2.16 Flood Plains. The ROW corridor is not located within a flood plain. See ER Section 2.5.2. "Floods."

4.2.17 Proximity to Hazardous Waste Sites. Low is located approximately 7 miles east of the Aptus hazardous waste incinerator, the nearest hazardous waste site. Other hazardous waste sites are the Envirocare Mixed Waste and Low-level Radioactive Waste Landfill (15 miles) and the Grassey mountain hazardous Waste Storage Facility (16 miles). There are no known hazardous waste sites in the vicinity of the rail corridor.

4.2.18 Grazing. The rail line crosses the Eightmile and Black Knoll Pastures which are part of the Skull Valley grazing allotment. Construction activities related to the rail line will temporarily disturb resident livestock and cause them to avoid the construction area. Operation of the rail line is not expected to adversely affect livestock grazing since the ROW will not be fenced and livestock will be able to freely cross the rail line accessing rangeland on either side. Due to the infrequent number of railroad trips (1-2 round trips/week) and the slow train speed (20 mph), collisions with livestock are not anticipated. See ER Sections 2.2.2 "Land Use" and 4.4.1, "Effects on Geography, Land Use and Demography."

## 5. CONSTRUCTION

5.1 Construction Schedule. Construction of the line is scheduled to begin in the fall of 2000 and last about 14 months.

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5.2 Temporary Use Permit. A temporary use area of 100 feet, 50 feet on each side of the 200 foot wide permanent ROW, will be needed for topsoil stockpiles and other construction uses. Those areas of the temporary use area used for soil stockpiles will be cleared of vegetation. Use of these additional areas will be needed during the 14-month construction period.

5.3 Access to and Along ROW During Construction. Access to the ROW will be from the established roads in Skull Valley and along the rail corridor itself.

5.4 Equipment Requirements. Construction of the rail line will require the use of several pieces of heavy equipment including scrapers, bulldozers, front end loaders, dump trucks, graders, compactors, rail layers, etc. When construction details are finalized, PFS will amend the POD to provide equipment requirements.

5.5 Work Force Requirements. See ER Tables 4.1-1, "Estimated Construction Labor Force Phase 1 Activities," for a list of construction workers expected to construct the PFSF. Construction of the rail line will likely require a General Superintendent, Equipment Operators, General Laborers, and a Construction Engineer. When construction detail are finalized, PFS will amend the POD to provide a detailed work force list.

5.6 Flagging and Staking. Prior to construction, a survey crew will stake the rail centerline, the boundaries of the 200-foot ROW, and the temporary use areas.

5.7 Clearing and Grading of the Right-of-Way.

5.7.1 Vegetation Clearance. Clearing will consist of the removal and disposal of vegetation along the 40 foot wide rail bed, at cut and fill areas, and soil stockpile areas within designated stockpile areas of the temporary use areas.

5.7.2 Topsoil Saving And Stockpiles. Where topsoil exists, the original ground surface will be excavated along a 10 foot wide strip of land along the rail bed and at cut and fill areas to a depth of approximately 6 inches and the topsoil will be stockpiled. Stockpiles will be used for final surfacing to support vegetation growth. Stockpiles slopes will be maintained in a stable condition.

5.7.3 Disposal Of Woody Vegetation. Woody vegetation will be shredded and scattered in place.

5.8 Earthwork

5.8.1 Cut And Fill Areas. Cuts and fills of the existing grade will be made to establish the new rail profile grade by mechanical means i.e., scrapers,

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bulldozers, graders, etc. Explosive charges will not be used unless required for the soil conditions.

5.8.2 Borrow Material and Ballast Sources. Fill material for cuts will be obtained from nearby cuts. The project will be balanced cut and fills in order to minimize the need for additional fill material. Ballast will be obtained outside of the ROW from an existing commercial gravel pit in the area.

5.8.3 Preparation of Railroad Bed. The railroad sub bed will be proof-rolled and backfilled with one foot of compacted fill material (excavated or imported). A minimum of 12 inches of sub-ballast will be placed on the prepared surface.

5.8.4 Soil Erosion And Water Pollution Control Measures. Erosion and water pollution control measures will include minimizing vegetation removal, construction of silt fencing and hay bales to stabilize slopes, temporary ditches and berms to divert stormwater away from existing drainages, maintenance of soil stockpiles, and limiting the areas of construction activities.

5.8.5 Disposal Of Unuseable Excavated Materials. Since the cut and fills will be balanced, it is expected that the quantities of unuseable excavated materials will be nonexistent or minimal. Specific plans for disposal of any excess excavated material have not been determined at this time.

5.9 Rail Installation. The ties and rail will be laid on top of the ballast and a rail construction machine will travel along the previously laid rail and install the remaining six inches of crushed gravel or rock ballast beneath and around the wooden ties. The construction machine will also attach the rails to the ties using spikes and tie plates. The rail will be spliced with bolted joint plates for ease of assembly.

5.10 Construction Procedures. When design of the rail line is completed, PFS will amend the POD to include a construction plan addressing the following issues:

- Contingency Planning.
- Dust Abatement.
- Traffic Control Plan for Road Crossings.
- Safety Plan for Employees and Contractors.
- Waste Disposal.
- Fire Prevention and Suppression Plan.

5.11 Stabilization, Rehabilitation and Revegetation.

5.11.1 Recontouring. After construction, all unoccupied disturbed areas will be graded to a stable contour that will support adequate surface water drainage patterns in the area.

5.11.2 Erosion Control Structures. Permanent erosion control measures will be maintained through the use of riprap and geotextile fabrics at culvert exits to prevent soil scouring and revegetating of cleared and excavated areas. When the design of specific erosion control structures is completed, PFS will amend the POD to identify the location and design of the structures.

5.11.3 Soil Replacement. Topsoil will be spread uniformly at approximately 2 inches thick on exposed cut and fill surfaces. Topsoil will consist of previously excavated stockpiled material.

5.11.4 Seeding Specifications. Seeding will be placed on topsoil by hydroseeding. Seeding will consist of mixing and applying an indigenous grass seed mixture, commercial fertilizer and stabilizing emulsion, or any combination thereof, with fiber and water. The indigenous grass seed mixture will consist of a proportional blend of the predominate grasses in the area. Only areas where grasses existed prior to excavation will be seeded.

6. OPERATION AND MAINTENANCE OF THE RAIL LINE

6.1 Level of use. During the initial years of operation until the Storage Facility reaches its capacity of 4000 stored canisters, it is expected that between 100 to 200 transportation casks will be shipped to the site each year resulting in one to two round trips being made on average each week. At the end of the Storage Facility's life (no more than 40 years), the 4000 canisters will be shipped from the site, over an indeterminate period of time, to a permanent storage facility. See details in ER Section 3.3, "Facility Operation." Each rail shipment will consist of 3 – 6 transportation casks. The largest train is expected to consist of two 1,500 horsepower locomotives with six cars containing casks, seven empty buffer cars, and one security car. The maximum speed of the train is expected to be 20 miles an hour. See ER Section 1.2, "Need For The Facility," for a more detailed discussion of the anticipated shipment volumes.

6.2 Access. PFS will use existing roads in the area and railroad vehicles along the track to access various portions of the rail line for maintenance purposes.

6.3 Inspection and Maintenance Requirements. Regular inspections and maintenance will be performed on the rail line as part of the PFS operations.

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Inspection and maintenance activities will be performed to ensure against rail damage, missing or loose bolts on rail joint plates, loose spikes, tie deterioration and settlement, ballast placement, and improper drainage.

6.3.1 Snow removal. Snow removal will not normally be conducted on the rail line.

6.3.2 Noxious Weed Control. Chemical herbicide will be used to control noxious weeds to keep the 40 foot wide rail corridor clear of vegetation and to control noxious weeds on newly seeded areas until grasses are established.

6.4 Fire Prevention and Suppression Plan. PFS will be using spark arrestors on engine stacks and special truck bearings that are designed to eliminate sparks that are typically associated with railroads. The 34 feet of ballast and clearing the 40-foot right of way of vegetation will further reduce the potential for fires. In addition, should a fire occur, because the rail spur will be constructed close to grade and crossings will be constructed approximately every mile, emergency fire vehicles will have access along the rail bed. Accordingly, the rail line will not significantly increase fire hazards in the area. No additional fire suppression is believed to be necessary.

6.5 Safety Plan. A Safety Analysis Report (SAR) addresses the operation and maintenance of the spent nuclear fuel casks. The SAR is required as part of the Nuclear Regulatory licensing process. A copy of the SAR can be accessed from the NRC or at the public access reading room at the Tooele County Library or University of Utah Library.

6.6 Public Access to ROW. Because the rail line will not be fenced, the public will have access to the ROW.

## 7. TERMINATION AND RESTORATION

7.1 Removal of facilities. At the end of the PFSF life, the rail, ballast, culverts and bridges will be removed from the area.

7.2 Reclamation of disturbed areas. After the rail and ballast are removed, the portions of the ROW affected by rail and ballast will be recontoured to stable contours that support natural drainage conditions. Disturbed areas will be revegetated as described above in paragraphs 5.11.4.