

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
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PRIVATE FUEL STORAGE, L.L.C.)	Docket No. 72-22-ISFSI
)	
(Independent Spent)	
Fuel Storage Installation))	

NRC STAFF'S FINDINGS OF FACT
AND CONCLUSIONS OF LAW CONCERNING
CONTENTION SUWA B (RAIL LINE ALIGNMENT ALTERNATIVES)

Robert M. Weisman
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June 7, 2002

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I. INTRODUCTION

1.1. These findings and rulings address all outstanding issues with respect to Contention SUWA B (Rail Line Alignment Alternatives) concerning the application filed on June 20, 1997, by Private Fuel Storage, L.L.C. ("PFS" or "Applicant"), for a license under 10 C.F.R. Part 72 to possess spent fuel and other radioactive materials associated with spent fuel storage in an away from reactor independent spent fuel storage installation ("ISFSI"), which PFS proposed to construct and operate on the Reservation of the Skull Valley Band of Goshute Indians in Skull Valley, Utah.

1.2. Detailed findings of fact concerning the procedural history of this proceeding are set forth in the Atomic Safety and Licensing Board's "First Partial Initial Decision" (Contention Utah R, Emergency Plan).¹ Those findings of fact are hereby incorporated by reference herein, and only those portions of the procedural history relating to the contention addressed herein are set forth below.

¹ *Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation)*, LBP-00-35, 52 NRC 363, 367-372 (2000).

1.3. On November 18, 1998, the Southern Utah Wilderness Alliance (“SUWA”) submitted a late-filed petition to intervene in this proceeding,² together with two late-filed contentions, including the contention considered herein.³ In a Memorandum and Order (Granting Late-Filed Intervention Petition) issued on February 3, 1999, the Licensing Board granted SUWA’s petition to intervene and admitted Contention SUWA B, which addressed rail line transportation alternatives to PFS’s proposed new rail line (“Low Corridor rail line”). *See Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-99-3, 49 NRC 40 (1999). In a decision dated April 15, 1999, the Commission affirmed the Licensing Board’s admission of SUWA as a party to the proceeding, and the Board’s admission of Contention SUWA B. *See Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318 (1999).

1.4. In June, 2000, the staff of the Nuclear Regulatory Commission (“NRC”) and the staffs of the Bureau of Indian Affairs (“BIA”) of the Department of Interior (“DOI”), the Bureau of Land Management (“BLM”) of DOI, and the Surface Transportation Board (“STB”) issued their draft environmental impact statement (“DEIS”) regarding the proposed PFS facility (“PFSF”) and its associated transportation facilities. *See* “Draft Environmental Impact Statement for the Construction and Operation of an Independent Spent Fuel Storage Installation on the Reservation of the Skull Valley Band of Goshute Indians and the Related Transportation Facility in Tooele County, Utah,” NUREG-1714.

² See “[SUWA] Request for Hearing and Petition to Intervene” (Nov. 18, 1998) (“SUWA Petition”).

³ See “SUWA Contentions Regarding PFS Facility License Application (The Low Rail Spur) (Nov. 18, 1998) (“SUWA Contentions”).

1.5. On June 29, 2001, PFS filed a motion pursuant to 10 C.F.R. § 2.749 seeking summary disposition of Contention SUWA B.⁴ The Licensing Board denied the PFS Motion, indicating that in its motion PFS had presented a new west valley rail line alternative that was not analyzed by the NRC staff ("Staff").⁵ See *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-01-34, 54 NRC 293, 303-04 (2001).

1.6. In December, 2001, the Staff and the staffs of the BIA, BLM, and STB (collectively, the "cooperating Federal agencies") issued their final environmental impact statement ("FEIS") regarding the proposed PFSF and its associated transportation facilities. See "Final Environmental Impact Statement for the Construction and Operation of an Independent Spent Fuel Storage Installation on the Reservation of the Skull Valley Band of Goshute Indians and the Related Transportation Facility in Tooele County, Utah," NUREG-1714.

1.7. Evidentiary hearings with respect to this contention were held in Salt Lake City, Utah, on April 23-24, 2002, in accordance with a notice of hearing published in the *Federal Register*. See 67 Fed. Reg. 10,448 (Mar. 7, 2002). Several witnesses appeared on behalf of PFS, SUWA, and the Staff, as summarized below. As indicated in the notice of hearing, limited appearance statements were received from many members of the public in special sessions held in Tooele, Utah, on April 26, 2002.

1.8. These proposed findings of fact and conclusions of law present the Licensing Board's findings of fact with respect to the evidence presented at the April 2002 hearings

⁴ See "[PFS] Motion for Summary Disposition of Contention SUWA B—Railroad Alignment Alternatives," dated June 29, 2001 ("PFS Motion").

⁵ Subsequent to this decision, the Licensing Board before which Contention SUWA B remained pending was reconstituted. See "Notice of Reconstitution," dated December 19, 2001 (unpublished).

concerning Contention SUWA B, and the Board's conclusions of law with respect to this contention.

II. FINDINGS OF FACT

A. Background

2.1. As admitted by the Licensing Board, Contention SUWA B asserted that the Applicant's Environmental Report ("ER") submitted with the application does not develop and analyze a meaningful range of alternatives to the proposed Low Corridor rail line:

The License Application Amendment fails to develop and analyze a meaningful range of alternatives to the Low Corridor Rail Spur and the associated fire buffer zone that will preserve the wilderness character and the potential wilderness designation of a tract of roadless Bureau of Land Management (BLM) land — the North Cedar Mountains — which it crosses.

PFS, LBP-99-3, 49 NRC at 53. The Licensing Board specifically stated that this contention was admitted insofar as "it seeks to explore the question of alignment alternatives to the proposed placement of the Applicant's proposed Low rail spur." *Id.* In affirming the Licensing Board's decision to admit this contention, the Commission agreed with the Board that "SUWA can litigate the question whether, in the circumstances of this case, NEPA requires PFS and the Staff to consider alternative rail routes that might prove more environmentally benign than PFS's chosen route."⁶ *PFS*, CLI-99-10, 49 NRC at 327.

2.2. As a basis for its contention, SUWA asserted that (1) the proposed Low Corridor rail line would traverse portions of the North Cedar Mountains identified by SUWA

⁶ In its decision in CLI-99-10, the Commission indicated that the application did consider a range of alternatives, but that those alternatives address only general transportation options (e.g., trucking vs. railroad), and did not reflect consideration of alternative configurations to the proposed Low Corridor rail line alignment. See CLI-99-10, 49 NRC at 326. As the Commission stated, the contention involves "a failure to consider alternative configurations to the specific alignment in question." See *id.* The contention does not involve further consideration of alternatives to rail transportation in general.

as possessing wilderness character and suitable for wilderness designation under the Wilderness Act of 1964 (SUWA Contentions at 2); and (2) construction and operation of the proposed rail line would irreversibly impair the asserted wilderness character of this area of the North Cedar Mountains (*id.* at 4-5). SUWA concluded that PFS had failed to develop and analyze a meaningful range of alternatives to the proposed Low Corridor rail line that would protect the asserted wilderness character of the North Cedar Mountains. *Id.* at 5-6.

B. Applicable Legal Standards

2.3. Three statutes, the National Environmental Policy Act of 1969, as amended (“NEPA”), the Federal Land Policy and Management Act of 1976, as amended (“FLPMA”), and the Wilderness Act of 1964, which defines “wilderness” for purposes of the FLPMA, set forth the legal standards relating to Contention SUWA B. These legal standards are set forth below. We begin by identifying the Commission regulations implementing NEPA.

2.4. In 10 C.F.R. Part 51, the Commission has established a comprehensive set of regulations addressing its responsibilities under NEPA. An applicant for an ISFSI pursuant to 10 C.F.R. Part 72 must file an environmental report. 10 C.F.R. §§ 51.60(b)(iii) and 51.45. Following the environmental scoping process, the Staff must issue a draft environmental impact statement (“EIS”), which is to include a preliminary analysis that considers and weighs the environmental effects of the proposed action; the environmental impacts of alternatives to the proposed action; and alternatives available for reducing or avoiding adverse environmental effects. 10 C.F.R. §§ 51.70 and 51.71(d). The Staff then must issue its Final EIS, based on a review of information provided by the applicant, information provided by commentors on the Draft EIS, and information and analysis which the Staff itself obtains. 10 C.F.R. § 51.97(c).

2.5. NEPA requires federal agencies to take a “hard look” at environmental consequences, as well as reasonable alternatives to the proposed action. *See Louisiana*

Energy Services, L.P. (Claiborne Enrichment Center), CLI-98-03, 47 NRC 77, 89 (1998) (“LES”); *Boston Edison Co.* (Pilgrim Nuclear Generating Station, Unit 2), ALAB-479, 7 NRC 774, 779 (1978). Consideration of alternatives has been referred to as the “linchpin” of the entire EIS. *New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87, 95 (1st Cir. 1978). An EIS must “rigorously explore . . . all reasonable alternatives.” *Id.* (emphasis in original).

2.6. In assessing the adequacy of an agency’s discussion of the impacts of a proposed action and any reasonable alternatives set forth in an EIS, a “rule of reason” test is employed to determine whether the EIS contains “a reasonably thorough discussion of the significant aspects of probable environmental consequences.” *Hells Canyon Alliance v. United States Forest Service*, 227 F.3d 1170, 1177 (9th Cir. 2000), *citing* *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 1376 (9th Cir. 1998); see *All Indian Pueblo Council v. United States*, 975 F.2d 1437, 1445 (10th Cir. 1992); *Maine Yankee Atomic Power Co.* (Maine Yankee Atomic Power Station), ALAB-161, 6 AEC 1003, 1011-12 (1973). The rule of reason governs “*which* alternatives the agency must discuss” and “the *extent* to which it must discuss them.” *Tongass Conservation Society v. Cheney*, 924 F.2d 1137, 1141-42 (D.C. Cir. 1991), *quoting* *Natural Resources Defense Council, Inc. v. Hodel*, 865 F.2d 288, 294 (D.C. Cir. 1988) (emphasis in original). When reviewing a license application filed by a private applicant, a federal agency may appropriately “accord substantial weight to the preferences of the applicant and/or sponsor in the . . . design of the project.” *Hydro Resources, Inc.* (P.O. Box 15910, Rio Rancho NM 87174), CLI-01-4, 53 NRC 31, 55 (2001), *citing* *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 197 (D.C. Cir.), *cert. denied*, 502 U.S. 994 (1991); *LES*, CLI-98-3, 47 NRC at 104, *citing* *City of Grapevine v. DOT*, 17 F.3d 1502, 1506 (D.C. Cir.), *cert. denied*, 513 U.S. 1043 (1994). NEPA does not “require agencies to analyze the environmental consequences of

alternatives it has in good faith rejected as too remote, speculative, or . . . impractical or ineffective.” *Custer County Action Ass’n v. Garvey*, 256 F.3d 1024, 1039 (10th Cir. 2001), *quoting Colorado Env’tl. Coalition v. Dombeck*, 185 F.3d 1162, 1174 (10th Cir.1999), *cert. denied*, 122 S.Ct. 1063 (2002). The standards applicable to analysis of alternative routes are the same as those which apply generally. *Compare Tongass*, 924 F.2d at 1141-42 (site alternatives) *with Custer County*, 256 F.3d at 1039-41 (alternative airspace configurations and usage for military training), *Concerned Citizens Alliance, Inc. v. Slater*, 176 F.3d 686, 705-06 (transportation plan alternatives), *and Friends of Boundary Waters Wilderness v. Dombeck*, 164 F.3d 1115, 1128-29 (alternative visitor and motorboat use restriction plans). Finally, for those alternatives that have been eliminated from detailed study, the EIS should “briefly discuss” why they were ruled out. *LES*, CLI-98-3, 47 NRC at 104, *citing* 40 C.F.R. § 1502.14(a).

2.7. The FLPMA required the Secretary of DOI to prepare an inventory of certain public lands, and review, by October 21, 1991, those roadless areas including five thousand or more acres that were identified by the inventory as having wilderness characteristics. 43 U.S.C. §§ 1711, 1782. The FLPMA defines “wilderness characteristics” by incorporating the provision in the Wilderness Act of 1964 that defines “wilderness.” That provision defines “wilderness” as:

an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean . . . an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired

condition; and (4) may also contain ecological, geological, or other features of scientific, education, scenic, or historical value.

16 U.S.C. § 1131(c). The FLPMA further directed the Secretary to report to the President a recommendation as to the suitability or nonsuitability of each area identified by the inventory (which was performed by BLM) for preservation as wilderness. 43 U.S.C. § 1782(a). See generally, *Utah v. Babbitt*, 137 F.3d 1193, 1197-99 (10th Cir. 1998) (describing how BLM implemented the FLPMA).

C. Evidence Adduced at Hearing

1. Testimony Presented

2.8. Before any witnesses testified at the hearing, the Staff offered the FEIS in evidence pursuant to 10 C.F.R. § 51.104(a)(1). Without objection, the Board admitted the FEIS into evidence in the proceeding as Staff Exhibit E ("Staff Exh. E"). Tr. 4561-62.

2.9. The Applicant presented three witnesses in support of the application. These were: (1) Mr. John Donnell, a Licensed Professional Engineer ("PE"), who is the Project Director for PFS, and is responsible for the execution and integration of the legal and technical activities of the PFS project ("Testimony of John Donnell on Contention SUWA B—Railroad Alignment Alternatives" ("Donnell"), Post Tr. 4564 at 1); (2) Mr. Douglas Hayes, a Civil Design Engineer for Stone & Webster—a Shaw Group Company, who is the Lead Railroad Design Engineer on the PFS project, and is responsible for layout and development of construction drawings and railroad construction specifications for the proposed Low Corridor rail line. ("Testimony of Douglas Hayes on Railroad Alignment Alternatives Contention SUWA B" ("Hayes"), Post Tr. 4564 at 1-2); and (3) Ms. Susan Davis, who is a Senior Environmental Scientist for Stone & Webster—a Shaw Group Company, who assessed the impacts of the PFS transportation option, including those on vegetation, wildlife, and threatened and endangered species. ("Testimony of Susan Davis

on Railroad Alignment Alternatives Contention SUWA B” (“Davis”), Post Tr. 4564 at 1-2). In addition, following the presentation of other parties’ testimony on this contention, PFS presented oral rebuttal testimony by Mr. Hayes and Ms. Davis. Tr. 4973-78.

2.10. Applicant witness John Donnell received a Bachelor of Science degree from the University of Toledo where he majored in Electrical Engineering. Donnell, Post Tr. 4564, at 1; *Curriculum Vitae* attached to Donnell (“Donnell Qualifications”) at 2. He is a registered professional engineer. Donnell Qualifications at 2. Mr. Donnell has 21 years of experience in nuclear project management and engineering, with experience in site selection; ISFSI storage technology assessment, selection, and bid specification; ISFSI project scoping, staffing, and licensing; design; and budget and schedule control. *Id.* at 1-2. As Project Manager for the proposed PFSF, Mr. Donnell is responsible for the engineering, design, budget, and schedule control for the project. *Id.* In addition, he is knowledgeable about PFS’s plan for the construction and operation of a railroad from the proposed PFSF to an interconnection with the Union Pacific Railroad at Low Junction, in Utah, and alternative rail alignments to service the proposed PFSF. Donnell, Post Tr. 4564, at 1. Mr. Donnell has visited the Low Corridor area a number of times over the course of his work on the PFS project. *Id.* The Licensing Board finds that Mr. Donnell is familiar with the design and alignment of the proposed Low Corridor rail line, and the conditions in the area near that proposed line.

2.11. Applicant witness Douglas Hayes studied Industrial Engineering at Fresno City College, Fresno, California. Hayes, Post Tr. 4564, at 1; *Curriculum Vitae* attached to Hayes (“Hayes Qualifications”) at 1. He is a Registered Land Surveyor and a Certified Engineering Technician. Hayes Qualifications at 1. He has more than 40 years of experience in surveying and engineering civil projects, including access and site road design of asphalt, concrete, and gravel roads, including earthwork, structural and drainage

considerations, railroad loading, unloading and transportation for heavy and light rail and site development, and experience performing geodetic surveys. *Id.*; Hayes, Post Tr. 4564 at 1-2. Mr. Hayes has designed portions of rail lines or spurs on at least a dozen projects, and has performed earthwork design on numerous projects, with one, the Denver International Airport, involving approximately 113,000,000 cubic yards of earthwork. Hayes Qualifications at 2-9. Based on his extensive experience, the Licensing Board finds Mr. Hayes to be well-qualified as an expert witness on the subjects of railroad design engineering and earthwork.

2.12. Applicant witness Susan Davis received a Bachelor of Science degree from the University of New Hampshire where she majored in Wildlife Management. Davis, Post Tr. 4564, at 1; *Curriculum Vitae* attached to Davis ("Davis Qualifications") at 2. She has six years of experience in environmental research and consulting, preparing environmental impact assessments for a variety of infrastructure development projects, including preparing impact assessments of the following resource areas: wetlands, forests, other vegetation, wildlife, fisheries, and state and federally listed threatened and endangered species. Davis Qualifications at 1. Ms. Davis has prepared impact assessments for sites in mountain, desert, coastal and marine environments. *Id.* She has participated in alternatives analysis for new natural gas pipeline routing, including performing wetland function and value assessments. *Id.* Ms. Davis has performed field work including wetland delineation, wildlife habitat evaluations, wetland function and value assessment, and rare species surveys for reptiles, amphibians, and insects. *Id.* In performing her duties, Ms. Davis has visited the area near the proposed Low Corridor rail line, and is familiar with that area. Davis, Post Tr. 4564 at 2-3; Tr. 4616-17, 4619. Ms. Davis has prepared environmental analyses on a wide variety of projects. Davis Qualifications at 2-8. The Licensing Board finds Ms. Davis to be well-qualified as an expert witness on the subject of environmental impact analysis,

particularly with respect to wetlands, wildlife habitat, and evaluation of alternatives. In addition, the Board finds that Ms. Davis is familiar with the conditions in the area near the proposed Low Corridor rail line.

2.13. The Staff presented a panel of four witnesses concerning this contention. These were: (1) Britta N. Laub, an Outdoor Recreation Planner for the DOI, BLM, Salt Lake Field Office ("SLFO"), who assisted the Staff in its evaluation of the potential environmental impacts related to the Applicant's proposed construction and operation of the transportation facilities associated with the proposed PFSF and alternatives to those facilities, and assisted in the preparation of the Staff's FEIS; (2) Kenneth E. McFarland, a principal engineer with Washington Infrastructure Services, Inc., in San Ramon, California, which is a third party contractor with the STB, who reviewed and verified the amount of cut and fill necessary to construct both the Applicant's proposed Low Corridor rail line and the west valley rail alternative, and reviewed the engineering issues associated with rail line alternatives originating north of Interstate 80 ("I-80"), and the quantities of excavation and embankment ("cut and fill") materials associated with a rail line alternative, suggested by SUWA, that would lie approximately two miles to the east of the Applicant's proposed Low Corridor rail line; (3) Alice B. Stephenson, an Environmental Specialist for the DOI, BLM, SLFO, who assisted the NRC Staff in its evaluation of the potential environmental impacts related to the Applicant's proposed construction and operation of the transportation facilities associated with the proposed PFSF and alternatives to those facilities, and assisted in the preparation of the Staff's DEIS and FEIS; and (4) Gregory P. Zimmerman, the Leader of the Environmental Impact Analysis Group in the Environmental Sciences Division at the Oak Ridge National Laboratory ("ORNL"), in Oak Ridge, Tennessee, who assisted the NRC Staff in its evaluation of the potential environmental impacts related to the Applicant's construction and operation of the proposed PFSF and its associated transportation

facilities, and assisted in the preparation of the Staff's DEIS and FEIS. "NRC Staff Testimony of Britta N. Laub, Kenneth E. McFarland, Alice B. Stephenson, and Gregory P. Zimmerman Concerning Contention SUWA B (Rail Line Alignment Alternatives)" ("Laub *et. al.*"), Post Tr. 4653, at 1-5.

2.14. Staff witness Britta N. Laub received a Bachelor of Science degree from the University of Utah where she majored in Parks and Recreation Management. Laub *et. al.*, Post Tr. 4653, at 2; "Statement of Professional Qualifications" of Britta N. Laub ("Laub Qualifications"). She has approximately 10 years of experience as an outdoor recreation planner with BLM, including experience processing applications for special recreation permits. Laub Qualifications. Her experience in processing such applications includes public contact; application review; completion of National Environmental Policy Act requirements and decision record preparation; permit issuance and monitoring; and bonding and post use reporting. *Id.* Ms. Laub has provided recreation, off-highway vehicle, and visual resource management and wilderness information, requirements, and mitigation measures for field office NEPA documents. *Id.* She has prepared categorical exclusions and environmental assessments, and determined the adequacy of NEPA documentation as needed in support of recreation and wilderness program projects. *Id.* Ms. Laub also served as a Wilderness Coordinator with BLM Utah State Office, in which she was temporarily assigned to the Utah Statewide Wilderness Study Area Planning Team. *Id.* She has experience through this position in preparing a statewide environmental impact statement and multiple plan amendments to consider the establishment of new wilderness study areas. *Id.* In doing so, she has compiled field data for assigned locations and applied that information in the NEPA/planning process. She has also taken courses in wilderness management. Tr. 4666. In the course of performing her duties, Ms. Laub has visited the North Cedar Mountains area tens of times. Tr. 4664. The Licensing Board finds

Ms. Laub to be well-qualified as an expert witness on the subjects of outdoor recreation, environmental impact analysis, and wilderness assessment. The Board also finds that Ms. Laub is familiar with the conditions in the area near the proposed Low Corridor rail line.

2.15. Staff witness Kenneth E. McFarland received a Bachelor of Science degree from the University of Washington where he majored in Civil Engineering, and a Master of Science in Civil Engineering from San Jose State University. “Statement of Professional Qualifications” of Kenneth E. McFarland (“McFarland Qualifications”) at 1 (attached to Laub *et. al.*, Post Tr. 4653). He is a registered professional engineer in twelve jurisdictions. McFarland Qualifications at 1. He is also a member of the American Railway Engineering and Maintenance-of-Way Association, U.S. Committee on Large Dams. *Id.* at 7. Mr. McFarland has 36 years of civil engineering experience, 32 years of which have been spent on rail, transit, and water resources projects. *Id.* at 1. His experience includes trackwork and alignment design, civil engineering design, cost estimating, engineering supervision, survey control, contract administration and construction management activities. *Id.* Mr. McFarland has experience working on 20 rail projects. *Id.* at 1-5. The Licensing Board finds Mr. McFarland to be well-qualified as an expert witness on the subjects of rail line trackwork, rail line alignment design, and rail line civil engineering design.

2.16. Staff witness Alice B. Stephenson received a Bachelor of Science degree from Colorado State University where she majored in Economics. “Statement of Professional Qualifications” of Alice B. Stephenson (“Stephenson Qualifications”) at 1 (attached to Laub *et. al.*, Post Tr. 4653). Ms. Stephenson has 13 years of experience as an Environmental Specialist in the BLM SLFO. *Id.* She has experience in coordination and implementation of NEPA reviews, involving preparation and/or review of Environmental Assessments (EAs) and Environmental Impact Statements (EISs) and providing policy and program direction for implementation of existing office land use plans. Laub *et. al.*, Post

Tr. 4653 at 3; Stephenson Qualifications at 1. Ms. Stephenson has experience providing guidance on the NEPA process, including document preparation and content requirements, and providing analytical and technical review of EAs and EISs, both in-house to BLM and third-party submissions. Laub *et. al.*, Post Tr. 4653 at 3; Stephenson Qualifications at 1. She also has experience maintaining current land use plans; assuring that all proposed projects, both BLM and third party, are within the scope of the current plan; and monitoring all steps for completing land use plan amendments. Laub *et. al.*, Post Tr. 4653 at 3; Stephenson Qualifications at 1. Ms. Stephenson has experience providing guidance and expertise on all planning matters, including the relationship between NEPA and the FLPMA. Laub *et. al.*, Post Tr. 4653 at 3; Stephenson Qualifications at 1. In the course of performing her duties, Ms. Stephenson has visited the North Cedar Mountains area 10-15 times. Tr. 4664. The Licensing Board finds Ms. Stephenson to be well-qualified as an expert witness on the subjects of environmental impact analysis, and the relationship between NEPA analysis and the FLPMA. In addition, the Board finds that Ms. Stephenson is familiar with the conditions in the area near the proposed Low Corridor rail line.

2.17. Staff witness Gregory P. Zimmerman received both a Bachelor of Science degree and a Master of Science degree from the University of Tennessee, Knoxville, where he majored in Mechanical Engineering. "Statement of Professional Qualifications" of Gregory P. Zimmerman ("Zimmerman Qualifications") at 1 (attached to Laub *et. al.*, Post Tr. 4653). Mr. Zimmerman has over 20 years of experience at ORNL in risk and safety analyses, radioactive waste management, and environmental impact assessment. Zimmerman Qualifications at 1. Mr. Zimmerman's experience includes coordinating and supervising the technical progress of a multidisciplinary team of individuals who conduct environmental impact analyses and assessments for a variety of federal agencies. *Id.* His managerial responsibilities include the development of schedules, budgets, and work

assignments, as well as technical oversight, quality control, preparation, and assembly of final project deliverables and documents, especially including environmental impact statements and assessments. *Id.* The Licensing Board finds Mr. Zimmerman to be well-qualified as an expert witness on the subjects of environmental impact analysis, oversight and coordination of such analysis, and EIS preparation.

2.18. SUWA presented one witness, Dr. James C. Catlin, in support of its contention. Dr. Catlin is project director of the Wild Utah Project, based in Salt Lake City, Utah, and provides conservation biology and computer mapping services to the conservation community in Utah. “Testimony of James C. Catlin on the Wilderness Character of the North Cedar Mountains Contention SUWA B” (“Catlin”), Post Tr. 4795, at 1. In addition, following PFS’s oral rebuttal testimony by Mr. Hayes and Ms. Davis, SUWA presented oral rebuttal testimony by Dr. Catlin. Tr. 4980-81.

2.19. SUWA witness James Catlin received a Bachelor of Science degree from Oregon State University where he majored in Electrical and Electronics Engineering, a Master of Science in Civil Engineering from the University of Utah, and a Ph.D. from the University of California at Berkeley, Department of Environmental Science, Policy, and Management. Exhibit SUWA 1 (Resume of James Catlin) at 1 (attached to Catlin, Post Tr. 4795). Dr. Catlin’s Ph.D. dissertation concerned the use of GIS (geographic information systems) and how it influenced land use planning for the BLM. Tr. 4814. Dr. Catlin has 20 years of experience in public land issues. Catlin, Post Tr. 4795 at 1; Tr. 4820. Dr. Catlin has also assisted in editing two books concerning wilderness issues. SUWA Exh. 1 at 2. The Licensing Board finds Dr. Catlin to be well-qualified as an expert witness on the subject GIS mapping as it relates to public land use planning.⁷ The Board also finds that Dr. Catlin

⁷ Dr. Catlin does not claim to be familiar with how railroads are constructed
(continued...)

is qualified, based on his experience, as an expert on the subject of the criteria for defining wilderness characteristics.⁸

2.20. As more fully set forth below, having considered the testimony and other evidence presented by the parties, we find that the evidence supports a conclusion that the Staff has considered all reasonable rail alignment alternatives to the Low Corridor rail line and their environmental impacts, as set forth in the FEIS, and, therefore, has satisfied the requirements of 10 C.F.R. Part 51 and NEPA with respect to Contention SUWA B. Our evaluation of this matter follows in the discussion below.

2. Description of Skull Valley, the Proposed Rail Line, the Alternatives Considered by the Staff, and the Area Affected

2.21. In making our determination as to whether the Staff considered an adequate range of rail alignment alternatives, we will weigh the parties' testimony on the alternatives considered; how the proposed rail line and the alternatives might affect any wilderness characteristics of the areas through which they cross; and their other environmental impacts. We begin by describing Skull Valley, the proposed Low Corridor rail line, the alternatives considered by the Staff, and the areas through which the proposed rail line and the alternatives cross, all of which are not in dispute.

2.22. Skull Valley is a topographical valley located approximately 50 miles west of Salt Lake City, Utah, and about 22 miles east of the Great Salt Lake Desert. As shown in Figure 1.1 of the FEIS, Skull Valley is bounded on the east by the Stansbury Mountains and on the west by the Cedar Mountains. Staff Exh. E at 1-2. The northern end of Skull

⁷(...continued)

(Tr. 4809); does not claim to be knowledgeable on the cost of building railroads (Tr. 4809-12); and does not claim to be a biologist (Tr. 4814).

⁸ Dr. Catlin does not identify any training or experience in environmental impact analyses in his resume (SUWA Exh. 1), nor does he claim any expertise with respect to the treatment of wilderness issues in such analyses.

Valley lies just south of the Great Salt Lake. The valley is generally about 10 miles wide (east-to-west), although the width varies at different latitudes, and is about 30 miles long (north-to-south). Laub *et. al.*, Post Tr. 4653, at 8. The proposed project area within Skull Valley is shown in Figure 1.2 of the FEIS. Staff Exh. E at 1-3. The floor of Skull Valley at the location of the proposed PFS Facility is at an elevation of approximately 4,450 to 4,490 feet above mean sea level. Laub *et. al.*, Post Tr. 4653, at 9.

2.23. Existing transportation facilities in or near Skull Valley are limited to a single rail line and a few paved roadways. As shown in Figure 1.2 of the FEIS, I-80, running in a generally east-west direction, lies at the northern end of Skull Valley, approximately 25 miles north of the location of the proposed PFSF. Staff Exh. E at 1-3. The Union Pacific main rail line, also running in a generally east-west direction, similarly lies at the northern end of Skull Valley to the north of I-80, except where the rail line passes under (and south of) the interstate near the proposed Low (or Skunk Ridge) rail siding to the west of Skull Valley. In addition, a spur from the Union Pacific main line also passes under (and south of) I-80 in the valley to the east of the Stansbury Mountains. *Id.* A two-lane, paved road (identified as "Skull Valley Road" in Figure 1.2 of the FEIS) runs in a generally north-south direction in the eastern portion of the valley, passing approximately 2 miles east of the proposed PFSF. Laub, *et al.*, Post Tr. 4653 at 9; Staff Exh. E, Figure 1-2, at 1.3.

2.24. The proposed Low Corridor rail line would run approximately 32 miles from the Union Pacific main rail line in a generally southerly direction toward the proposed PFSF. The proposed rail line would originate just south of I-80 near Low, Utah, at the northern end of the Cedar Mountains. The proposed right-of-way for the new rail line generally follows the 4380-foot elevation (above mean sea level) topographical contour along the eastern foot of the Cedar Mountains, which lies on the western side of Skull Valley; thus, the proposed Low Corridor rail line would run along the western side of Skull Valley. Laub, *et*

al., Post Tr. 4653 at 9-10; see Staff Exh. E, § 2.1.1.3, at 2-14 and 2-15; Staff Exh. E Figure 1.2, at 1-3.

2.25. The specific details of the proposed rail line are described in Section 2.1.1.3 of the FEIS (*id.* at 2-14 and 2-15), and are depicted in cross-section in Figure 2.5 of the FEIS (*id.* at 2-17). As described in Section 2.1.1.3 of the FEIS (*id.* at 2-14 and 2-15), the right-of-way would be 200 feet wide, and the rail bed would be 40 feet wide. This 40-foot width would contain a 17-foot wide area filled with ballast (*i.e.*, 2-inch maximum sized rock for use as base material for the cross-ties and rails), which rests on a 34 foot wide layer of sub-ballast material, and a 3 foot wide cleared area on each side of the sub-ballast. Laub *et. al.*, Post Tr. 4653 at 10. An additional “temporary use area” of 50 feet on each side of the 200-foot permanent right-of-way would also be needed for topsoil stockpiles and other construction uses. Any of the remaining right-of-way which is disturbed during construction would be revegetated using the native seed mix recommended by the BLM. The top of the completed rail line would be approximately 4.5 feet above the surrounding terrain. *Id.* at 11.

2.26. The rail line would cross 32 arroyos (*i.e.*, gullies or gulches cut by ephemeral streams) at which drainage culverts designed to address flooding would be installed. The rail line would cross two improved gravel roads, as well as seven dirt roads and/or off-highway vehicle (“OHV”) trails. At-grade crossings would be constructed so as not to impair travel on these roads and trails. The rail line would not be fenced, and no access roads along the rail line would be provided. Access for maintenance purposes would be accomplished by existing roads in the area and by railroad vehicles moving along the track. *Id.* at 11-12.

2.27. As described in Section 2.2.4.2 of the FEIS, the Staff considered three rail alignment alternatives: (1) a new rail line originating from somewhere along the existing Union Pacific main rail line at the northern end of Skull Valley and north of I-80, (2) a new

rail line originating from an existing rail line east of the Stansbury Mountains, to the east of Skull Valley, and (3) a “west valley rail alternative” that would follow the alignment of the Applicant’s Low Corridor rail line, except for a segment about 6.5 miles in length, where it would deviate about 2000 to 3000 feet to the east of the proposed Low Corridor rail line so as to avoid an area that has been described by SUWA as the “North Cedar Mountains Area” (“NCMA”). Staff Exh. E at 2-47 to 2-51. The first two of these alternatives included consideration of a rail alignment in the eastern portion of Skull Valley, parallel to the route of the existing Skull Valley Road. The west valley rail alternative and the proposed Low Corridor rail line are shown on a map submitted with the Staff’s witnesses’ testimony (Staff Exhibit G). Laub *et. al.*, Post Tr. 4653 at 12.

2.28. In their testimony, Staff witnesses also discussed an alternative suggested by SUWA that might run “two miles to the east “ of the proposed Low Corridor rail line. *Id.* at 32, *citing* “Second Declaration of Jim Catlin For Petitioner [SUWA]” attached to the “Reply of [SUWA] to Staff and Applicant Responses to SUWA’s Petition to Intervene, Request for Hearing and Contentions” (Dec. 8, 1998). Such an alternative would appear to run through the mud flats that begin approximately one mile to the east of the proposed Low Corridor rail line, as is indicated on Staff Exhibit G. Such an alternative would also appear to pass through lands that are owned, managed, or held in trust by the State of Utah. *Id.* SUWA’s witness did not specify further details regarding this alternative in his testimony. See Catlin, Post Tr. 4795, at 7-8; Tr. 4845-49.

2.29. The NCMA lies at the northern end of the Cedar Mountains, and encompasses an irregular area approximately 7 miles long (north to south) by 5 miles wide (east to west). The NCMA lies to the north of the existing Cedar Mountain Wilderness Study Area, which is an area designated as such and defined by the BLM. The NCMA is shown on Staff Exhibit G.

3. Impacts of Proposed Low Corridor Rail Line

a. Overall evaluation

2.30. Chapter 5 of the FEIS addresses the environmental impacts of the proposed Low Corridor rail line. FEIS Chapter 5 sets forth the NRC Staff's evaluation of the impacts in the areas of geology, minerals and soils; water resources; air quality; ecological resources; socioeconomic and community resources; cultural resources; human health impacts of transporting spent nuclear fuel; noise; visual qualities; recreation; and wildfires. See Staff Exh. E, Ch. 5. In addition, FEIS Section 5.9 discusses the environmental impacts of decommissioning the proposed rail line. *Id.* at 5-74; Laub *et. al.*, Post Tr. 4653 at 13.

2.31. As set forth in the FEIS, the NRC Staff and the cooperating agencies concluded that the potential environmental impacts in the aforementioned areas would be small, except for the areas of (1) water resources (small to moderate impacts from flooding), (2) air quality (small to moderate impacts from dust generated during construction near I-80), (3) socioeconomics (small to moderate land use impacts to holders of grazing allotments and to wildlife use of watering resources within the project area), (4) cultural resources (small to moderate impacts to portions of eight important historic properties), and (5) scenic qualities (moderate impacts to recreational viewers and possibly to residents of Skull Valley). Laub *et. al.*, Post Tr. 4653 at 13. No party contests these findings.⁹

b. Earthwork evaluation

2.32. The earthwork quantities needed to construct the Low Corridor rail line are approximately 885,000 cubic yards of excavation (cut) and approximately 630,000 cubic

⁹ These matters are in issue here only to the limited extent they must be evaluated to compare the impacts of the Low Corridor rail line to those of any particular alternative considered. Otherwise, consideration of such impacts is outside the scope of Contention SUWA B. See LBP-99-3, 49 NRC at 53 (rejecting Contention SUWA A, which asserted a failure to consider adequately the impacts of the proposed Low Corridor rail line.)

yards of embankment (fill). This results in approximately 255,000 cubic yards of extra cut material. The Applicant has proposed to place this excess material in the areas adjacent to the new rail line, as additional embankment. Laub *et. al.*, Post Tr. 4653 at 15. The Low Corridor rail line was laid out in a manner that attempted to balance cut and fill throughout its length, while maintaining grades not to exceed 1.5 percent. *Id.* These facts are not in dispute.

c. Wilderness evaluation

2.33. As set forth above, the FLPMA required BLM to perform an inventory of certain public lands having certain characteristics. In sum, BLM was to study the suitability of public lands for preservation as wilderness based on four criteria, namely: (1) size (contains at least 5,000 acres); (2) naturalness (affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable); (3) outstanding opportunities for solitude or a primitive and unconfined type of recreation; and (4) may contain supplemental values (ecological, geological, or other features of scientific, educational, scenic, or historical value). For an area to qualify for study under the FLPMA, it must satisfy all of the first three of these criteria; satisfaction of the fourth criterion is optional. See Laub *et. al.*, Post Tr. 4653 at 15-16; *cf. Sierra Club v. Hodel*, 848 F.2d 1068, 1085 (10th Cir. 1988) (quoting district court explanation of BLM's application of FLPMA criteria in designating wilderness study areas).

2.34. As Dr. Catlin stated during cross-examination, the NCMA is approximately 14,000 acres in size. Tr. 4839. The proposed rail line would intersect the easternmost edge of the NCMA, and would separate a parcel that is about 2.5 miles long (north to south) by 0.4 mile wide (east to west), from the remainder of the NCMA. Laub *et. al.*, Post Tr. 4653 at 12-20. As Dr. Catlin indicated, the area between the eastern boundary of

NCMA and the proposed Low Corridor rail line would be approximately 800 acres. Tr. 4838. There is no dispute about these facts.

2.35. As stated by Dr. Catlin, the remaining portion of the NCMA would be approximately 13,200 acres, and this 13,200 acre parcel would still meet the size criterion of 5,000 acres for wilderness set in the Wilderness Act of 1964. Tr. 4839-40. Further, having a railroad on the border of a wilderness area does not exclude that area from being considered as wilderness. Tr. 4841. There is no dispute about these facts. Based on the foregoing, the Licensing Board finds that construction and operation of the proposed Low Corridor rail line would “preserve the wilderness character and the potential wilderness designation” of this 13,200 acre portion of the NCMA, and no alternative will offer any benefit in this regard. Further, the Licensing Board finds that only the 800 acre parcel bounded by the proposed Low Corridor rail line and the eastern boundary of the NCMA could be affected with respect to wilderness issues by the proposed rail line.

2.36. Because the wilderness characteristics of 13,200 acres of the NCMA cannot be affected by construction and operation of the proposed rail line, this Licensing Board need not determine whether that area does, in fact, possess wilderness characteristics (other than size) as defined in the Wilderness Act of 1964. As set forth below, however, it will be necessary for the Board to reach this question with respect to the 800 acre parcel that could be affected with respect to wilderness characteristics by the proposed Low Corridor rail line.

2.37. The BLM has determined that the NCMA does not possess wilderness characteristics. BLM performed an intensive inventory of the North Cedar Mountains in 1979 for wilderness characteristics. While the area met the FLPMA's size requirement, as discussed above, it was found to lack each of the other three wilderness characteristics defined in the Wilderness Act and described above in Paragraph 2.33. Based on the

wilderness characteristics analysis, the BLM in 1980 recommended that the North Cedar Mountains not be designated a wilderness study area. Laub *et. al.*, Post Tr. 4653 at 16-17. In its analysis of the impacts of alternatives on wilderness values, the FEIS describes this 1980 BLM determination. Staff Exh. E at 2-49.

2.38. Pursuant to BLM Manual H-6310-1 ("Wilderness Inventory Handbook" or "WIH"), on April 11, 2001, SUWA submitted a proposal to the BLM, suggesting that the proposal contained "supplemental and new information" that would cause the BLM to revisit the 1980 North Cedar Mountains wilderness determination. The BLM considered SUWA's April 2001 proposal, in accordance with the BLM Wilderness Inventory Handbook. Pursuant to the WIH, proposals must contain the following: (1) A map identifying specific boundaries, (2) a detailed narrative that describes the suggested wilderness characteristics of the area, and (3) photographic documentation. The SUWA proposal contained the required components as outlined in the WIH; however, the proposal did not describe or present information that significantly differed from information in prior BLM inventories regarding the wilderness values of the area. Rather, the SUWA submission primarily disagreed with BLM's prior (1979-1980) intensive wilderness inventory, but did not provide significant new information that would change the BLM's 1980 determination and did not provide information to support a re-evaluation of the area. Laub *et. al.*, Post Tr. 4653 at 17. This information is summarized in the analysis in the FEIS. Staff Exh. E at 2-49.

2.39. In view of the above, a determination was made on May 7, 2001 by the BLM Salt Lake Field Office Manager that the material provided by SUWA did not constitute significantly different information to warrant further review of the North Cedar Mountains wilderness values at that time. See Letter to S. Bloch, SUWA, from G. Carpenter, BLM,

dated May 8, 2001 (Staff Exhibit H). This determination is not an appealable decision.¹⁰ To date, SUWA has not submitted additional North Cedar Mountain proposals to the BLM. Laub *et. al.*, Post Tr. 4653 at 17. The FEIS analysis considers this information. Staff Exh. E at 2-51.

2.40. The Licensing Board observes that the decision of the Atomic Safety and Licensing Appeal Board in the *Yellow Creek* proceeding, while not strictly applicable here, embodies considerations that counsel against our review of the BLM decisions discussed herein, and, we believe, entitles us to rely on those BLM decisions. See *Tennessee Valley Authority* (Yellow Creek Nuclear Plant, Units 1 and 2), ALAB-515, 8 NRC 702 (1978). In *Yellow Creek*, the Appeal Board affirmed a Licensing Board decision that the Staff had no discretion to demand that an applicant perform water monitoring operations above and beyond those specified by the EPA permit authorizing the discharges. ALAB-515, 8 NRC at 713. While a statute prohibited the Staff from demanding such monitoring in *Yellow Creek*, the considerations that gave rise to that provision apply equally here.

2.41. As the Appeal Board discussed in *Yellow Creek*, the Congressional mandate to acquire expertise in developing, setting, and enforcing effluent limitations and water quality standards had been given to EPA. *Id.* at 712-13. The Appeal Board stated further that Federal licensing agencies were to rely on EPA when such matters were involved, and were not to develop duplicate expertise on their own. *Id.* at 713. Such agencies were not to “second-guess” EPA by undertaking independent analyses and setting their own standards in that area. *Id.*

¹⁰ The Licensing Board notes that SUWA has challenged a BLM offering of oil and gas leasing that apparently made the same finding as set forth in Staff Exhibit H. See SUWA Exhibit 3; Tr. 4555. The Board also notes that while SUWA’s appeal is pending before the Interior Board of Land Appeals in the leasing proceeding, a stay of BLM’s decision offering leasing in that proceeding was requested and denied. Tr. 4556.

2.42. Here, the NRC has no authority or expertise to determine whether an area has wilderness characteristics. Rather, an agency charged with such duties by the FLPMA, BLM, is a cooperating agency in the preparation of the FEIS, and the analysis in the FEIS summarizes and relies on the BLM's determinations in its 1980 intensive inventory and its May 8, 2001, letter to SUWA. The Licensing Board believes that, in these circumstances, the NRC should rely on the BLM's final determinations with respect to whether the NCMA possesses wilderness characteristics or not. Accordingly, the Board relies on the BLM's 1980 and 2001 determinations, as summarized in the FEIS, to conclude that the NCMA as a whole lacks wilderness characteristics, and no further analysis of rail alignment alternatives is required with respect to Contention SUWA B.

2.43. Notwithstanding our reliance on the BLM determinations described above, we have also carefully evaluated the evidence presented by the parties. Based on our consideration of that evidence, and as more fully described below, we agree with BLM that the NCMA in general, and the area of the NCMA that could be affected by the proposed rail line (amounting to approximately 800 acres) in particular, lacks wilderness characteristics. The testimony of each party is described below, followed by our evaluation of the evidence.

2.44. In their testimony, Staff witnesses Laub and Stephenson identified in detail the conditions in the NCMA that formed the bases for the Staff's conclusion. Laub *et. al.*, Post Tr. 4653 at 18-24. Specifically, they testified that the North Cedar Mountains, especially the eastern area traversed by the proposed rail line, already show the impact of man through numerous motorcycle paths and other extensions of routes used primarily by OHVs, including a route running north-south parallel to the proposed rail line. *Id.* at 18. They also testified that the area shows the impact of livestock grazing and wildfire, and described the vegetation in the area. *Id.* Further, they described specific human activities

occurring in the NCMA, including drill seeding, mining claims, a system providing drinking water for wildlife, and a maintenance route. *Id.* at 19.

2.45. Staff witnesses Laub and Stephenson testified that the NCMA lacks “naturalness” because the imprint of man’s work is substantially noticeable in the NCMA. *Id.* at 20. They testified that, while some interior hillsides are untrammelled by man and are affected by the forces of nature, a feeling of sublime naturalness is lacking because of the openness and exposure to other imprints. *Id.* They conclude, therefore, that the area lacks the necessary condition of “naturalness.” *Id.*

2.46. The Staff also introduced into evidence representative photographs of the condition of the area near the proposed Low Corridor rail line (Staff Exhibits J-O). Tr. 4696. According to Staff witnesses Laub and Stephenson, these photographs collectively show that current conditions in this area are consistent with the BLM’s original determination regarding lack of naturalness. Laub *et. al.*, Post Tr. 4653 at 21.

2.47. Staff witnesses Laub and Stephenson also testified that the NCMA lacks “outstanding opportunities for solitude or a primitive and unconfined type of recreation.” *Id.* at 22. With respect to solitude, they testified that the upper elevations and inner portion of the NCMA provide scattered opportunities for solitude. *Id.* They testified further, however, that the lower, outside portions of the NCMA (including the area near the proposed Low Corridor rail line) lack outstanding opportunities for solitude, due to the sparse vegetative cover, relative open terrain and the cumulative effect of many impacts in it. *Id.*

2.48. With respect to recreation, Staff witnesses Laub and Stephenson testified that certain opportunities for a primitive and unconfined type of recreation exist in the North Cedar Mountains, in the form of hunting, horseback riding, hiking, wildlife observation and sightseeing. *Id.* They testified further, however, that in and of themselves, these opportunities may not be described as “outstanding,” because wildlife populations and

numbers are few; terrain for hiking and horseback riding is not unique in nature and does not provide outstanding potential for these recreation types; and sightseeing is encumbered by the many outside activities and interior impacts of man. *Id.*

2.49. On cross-examination, Staff witnesses Laub and Stephenson maintained the Staff's positions that (1) there is no reason to revisit the 1980 BLM decision, and it still stands (Tr. 4709); (2) the NCMA lacks outstanding opportunities for solitude (Tr. 4721-23); (3) the scope of the 1996 reinventory of lands identified in H.R. 1500 (which was sponsored by SUWA) did not include the NCMA (Tr. 4713-14); (3) SUWA's 2001 submission to BLM did not contain information significantly different from the 1980 BLM intensive inventory, and did not warrant reinventory of the NCMA (Tr. 4668, 4710, 4733); (4) the majority of intrusions into the NCMA lie north of the southern boundary of the NCMA identified by SUWA in 2001 (Tr. 4734, 4739), and the locations of these intrusions are available in the 1980 BLM determination (Tr. 4742); and (5) BLM's rejection of SUWA's 2001 submission was based, in part, on current information that demonstrated SUWA's failure to provide significantly new and different information in accordance with the WIH (Tr. 4732-22, 4743-44, 4775).

2.50. Ms. Laub also explained on cross-examination that the 1980 inventory included two phases, namely, an "initial inventory," which would provide a basis to determine whether the second phase, the "intensive inventory," was recommended. Tr. 4764. (The Board notes that it is quite clear that the 1980 BLM determination is based on the second phase, *i.e.*, the intensive inventory. See Laub *et. al.*, Post Tr. 4653 at 20.) Ms. Laub also explained that BLM does not compare one area to another in determining whether each area has wilderness characteristics (Tr. 4716); that an area can be found lacking in wilderness characteristics but revert to having such characteristics (Tr. 4720);

and that a right-of-way, including a rail line right-of-way, can function as a boundary for a wilderness study area (Tr. 4756).

2.51. The Applicant supported the Staff's position. Applicant witnesses Donnell and Davis both supported the Staff's view that the area near the proposed Low Corridor rail line lacked wilderness characteristics. Specifically, Mr. Donnell testified that he has seen numerous "jeep" trails and one-track paths that cross the Low Corridor and head in the general direction of the mountains, and has occasionally seen vehicles using the trails in the area. Donnell, Post Tr. 4564 at 3. Mr. Donnell also referred to Applicant Exhibit II as showing such trails. *Id.* Similarly, Ms. Davis testified that (1) she has observed multiple "jeep" trails and single-track paths crossing the proposed Low Corridor rail line to provide vehicle access to the North Cedar Mountains, (2) there is a well-defined dirt road that runs north to south, roughly parallel to the proposed rail line, (3) there is evidence of recreational use of these trails and roads, and neighboring lands, and (4) she has occasionally seen shell casings and other trash left by people who have been in the area. Davis, Post Tr. 4564 at 5-6. In addition, Ms. Davis also testified that the Low Corridor rail line would not have a significant impact on wilderness characteristics. *Id.* at 6. Ms. Davis referred to Applicant Exhibit GG, which consists of photographs, as showing the area near the proposed Low Corridor rail line. *Id.* at 3.

2.52. For its part, SUWA disputed the Staff's and Applicant's testimony. SUWA witness James Catlin testified that the NCMA does not contain substantially noticeable human impacts and clearly possesses opportunities for solitude and to practice primitive recreational activities. Catlin, Post Tr. 4795 at 4. With respect to naturalness, Dr. Catlin simply asserted that the NCMA does not contain substantially noticeable human impacts. *Id.* He explained that the boundaries of the NCMA were drawn to exclude all significant impacts that were the basis for the 1980 BLM determination. *Id.* at 5.

2.53. With respect to solitude and recreation, Dr. Catlin stated that the NCMA possesses topographic features, vegetation, and incised canyons and ridgetops similar to the Cedar Mountains WSA, and, therefore, BLM should find outstanding opportunities for solitude and recreation in the NCMA. *Id.*

2.54. With respect to naturalness, Dr. Catlin stated on cross-examination that cheatgrass created fire risk problems. Tr. 4858. He then admitted that in part of the NCMA through which the proposed rail line would cross, cheatgrass was already the dominant growing plant. Tr. 4859. Dr. Catlin also admitted that he believed the area should be recovered from its current status. Tr. 4881-82, 4934-35. In discussing restoring the area, Dr. Catlin indicated that action would be required with respect to “a number of human uses [in the area] . . . but it’s going to be a difficult process.” Tr. 4943-44, 4963. He also stated that there is “continued growth of off-road vehicle trails which advocates are trying to legitimize and propagate through the area.” Tr. 4944. While Dr. Catlin believes that loss of the natural plant community is caused mostly by cattle grazing (Tr. 4948), he also indicated that impacts caused by animals do not affect naturalness (Tr. 4942).

2.55. With respect to solitude and recreation, Dr. Catlin admitted on cross-examination that the area near the proposed rail line lacks incised canyons, pinnacles, steep cliffs, ridge tops, and abrupt changes in topography. Tr. 4855, 4879. While Dr. Catlin claimed on redirect that opportunities for solitude in the NCMA are outstanding (Tr. 4939), he did not state any basis for this claim. See Tr. 4937-4939.

2.56. The Licensing Board finds that Staff and Applicant have provided specific evidence of facts demonstrating that the NCMA in general and the area near the proposed Low Corridor rail line in particular lacks naturalness and outstanding opportunities for solitude or a primitive and unconfined type of recreation. In so finding, we acknowledge BLM’s role as a cooperating agency in preparing the FEIS, BLM’s duties under the FLPMA

with respect to wilderness issues, and its expertise on such issues. Therefore, in making this finding, the Board accords great weight to the 1980 and 2001 BLM determinations, as presented by Staff witnesses Laub and Stephenson, both of whom are BLM employees.

2.57. The Board also finds that SUWA has not provided evidence of specific facts relating to naturalness to contradict the evidence presented by the Staff and Applicant. To the contrary, Dr. Catlin, in discussing restoration of the area, appears to acknowledge human activities (including the use of off-road vehicle trails) near the proposed Low Corridor rail line. Moreover, the 1980 BLM determination identified human intrusions north of the southern boundary of the NCMA, and Dr. Catlin did not attempt to identify the location of these intrusions or explain why they might not affect naturalness of the NCMA as a whole. Accordingly, we do not find Dr. Catlin's testimony regarding naturalness persuasive.

2.58. With respect to the criterion of "outstanding opportunities for solitude or a primitive and unconfined type of recreation," Dr. Catlin admitted that there are no "incised canyons and ridgetops" in the NCMA in the area near the proposed rail line, as set forth above. The Board finds this consistent with both the Staff's and Applicant's testimony, and the photographs in Staff Exhibits J-O and Applicant Exhibit GG. In addition, SUWA appears to rely on BLM's initial inventory in 1979 for the proposition that the NCMA has outstanding opportunities for solitude. Tr. 4897; SUWA Exh. 7 at unnumbered 8. As Ms. Laub explained on cross-examination, however, the initial inventory was done to provide a basis to determine whether a second phase, the "intensive inventory," should be performed. Tr. 4764. As discussed above, the intensive inventory documents that opportunities for solitude in the portion of the NCMA through which the proposed Low Corridor rail line would pass are not outstanding, and Dr. Catlin did not state a basis for

concluding otherwise. Therefore, we find that Dr. Catlin's testimony regarding the wilderness criterion of solitude is not persuasive.¹¹

2.59. Having considered the above testimony, and according due weight to the 1980 and 2001 BLM determinations, the Licensing Board finds that the NCMA as a whole, and the 800 acre parcel that could be affected by the proposed Low Corridor rail line in particular, lacks wilderness characteristics, and no rail alignment alternative will preserve either area for designation as wilderness.

4. Alternatives and Their Impacts

2.60. Notwithstanding that the area through which the proposed Low Corridor rail line would cross lacks wilderness characteristics, and alternative rail alignments would have no effect on preserving Congress's ability to designate such areas as wilderness, the Licensing Board has considered the parties' testimony on rail alignment alternatives considered by the Staff, as set forth below.

¹¹ Dr. Catlin also identified supplemental values (as defined under the Wilderness Act's fourth criterion) that he believes contribute to the NCMA's suitability as a wilderness area. Catlin Post Tr. 4795 at 4. As discussed above, Dr. Catlin testified on redirect that the area near the proposed rail line had the potential to recover its biological and ecosystem values. Tr. 4943.

With respect to supplemental values, Staff witnesses Laub and Stephenson testified that rock windows, sawtooth ridges and small caves carved in cliffs and terraces are common throughout the northern section of the NCMA. Laub *et. al.*, Post Tr. 4653 at 22. They testified, however, that these are displays cut by either the Bonneville or Provo levels of ancient Lake Bonneville, and are considered to be typical geological formations, common to the Bonneville Basin. *Id.* They concluded, therefore, that these geological features are not unique to the NCMA and are not particularly significant. *Id.* The Staff witnesses did not discuss any other supplemental values near the proposed Low Corridor rail line.

Supplemental values are optional in determining whether an area has wilderness characteristics. See ¶ 2.33, *supra*. Since we have determined that the evidence shows that the area does not have the required characteristics of naturalness and outstanding opportunities for solitude or a primitive and unconfined type of recreation, we need not consider these supplemental values further here.

a. Alternatives originating in Skull Valley north of I-80

2.61. The Staff's evaluation of this alternative is set forth in FEIS Section 2.2.4.2. Staff Exh. E. at 2-47. Building a new rail line from any location in the northern portion of Skull Valley other than Skunk Ridge would involve the construction of a new rail siding north of I-80, thereby creating an unresolved problem as to how the rail line would be able to cross the interstate to reach the Reservation to the south, as there is no existing rail line crossing the interstate in such areas. Also, construction of a new rail line in the eastern portion of Skull Valley, parallel to Skull Valley Road, would create the likelihood for construction activity to directly impact wetlands (at Horseshoe Springs), existing houses and ranches, and traffic on Skull Valley Road. This alternative was determined not to be superior to the proposed Low Corridor rail line. Laub *et. al.*, Post Tr. 4653 at 25.

2.62. The Staff provided a detailed discussion as to why there would be an unresolved problem in crossing I-80 associated with alternative alignments originating north of I-80 (see *id.* at 25-26). Staff witness McFarland testified that, if a connection were made to the Union Pacific mainline anywhere east of Low, a grade separation would be required to extend a new alternative rail line to the south. *Id.* at 25. Mr. McFarland explained that this could be done in either of two ways: (1) I-80 could be raised and bridged over the new alternative rail line, or (2) the alternative line could cross over I-80 using a bridge. *Id.* To raise I-80, Staff witness McFarland testified that approximately 3600 feet of I-80 could be reconstructed to pass it over an alternative rail line, in addition to construction of a four lane 50 foot span bridge, and this would require extensive detours of a major interstate highway while an overpass structure was being built. *Id.* Mr. McFarland also testified to the effect that, in order to construct a rail line that passes over the highway, a very long distance would be needed to raise the rail line over the highway, because the maximum railroad grade can be no more than 1.5 percent. *Id.* at 25-26.

2.63. The Applicant supports the Staff's position. Donnell, Post Tr. 4564 at 3-5. SUWA, however, does not address these alignments at all, nor did SUWA raise any issue with respect to such alignments through cross examination. Accordingly, the Licensing Board finds that rail alignment alternatives originating north of I-80 in Skull Valley would involve an unresolved problem in how to cross I-80 to reach the Reservation to the south, and would entail significant environmental impacts beyond those involved in the Low Corridor rail line. Based on the foregoing, the Board finds that no further evaluation of such an alternative is warranted.

b. Alternative originating east of the Stansbury Mountains

2.64. The Staff's evaluation of this alternative is set forth in FEIS Section 2.2.4.2. Staff Exh. E at 2-47. A new rail line originating east of the Stansbury Mountains (*i.e.*, alternative No. 2, above) would require a new rail corridor around the northern end of these mountains (*i.e.*, between the mountains and I-80), which would then continue south along Skull Valley Road. This option would result in significant construction impacts to the wetlands, houses, ranches, and traffic along Skull Valley Road, as well as substantial excavation at the northern end of the Stansbury Mountains because of the proximity of the mountains to the interstate at this location. In addition, operation of the rail line close to existing wetlands, houses, and ranches in Skull Valley would result in operational impacts that exceed the impacts of operating the Low Corridor rail line. Laub *et. al.*, Post Tr. 4653 at 26.

2.65. The Applicant supports the Staff's position. Donnell, Post Tr. 4564 at 3-5. SUWA does not address these alignments at all, nor did SUWA raise any issue with respect to such an alignment through cross examination. The Licensing Board finds that, based upon its significant impacts to wetlands, houses, ranches and traffic, and significant excavation impacts, no further evaluation of this alternative is warranted.

c. The West Valley Rail Alignment Alternative

2.66. As one alternative to the proposed Low Corridor rail line, the Staff, as described in paragraph 2.27, *supra*, considered a west valley rail alternative, which would originate at the same location as the proposed Low Corridor rail line (*i.e.*, at Skunk Ridge). This rail alignment is similar to the Low Corridor rail line with the following exception. At the point where the proposed rail line curves away from I-80, the curvature would turn less sharply so that this alternate would move more to the east, away from the Cedar Mountains, than the proposed Low Corridor rail line. After proceeding southeast for about 2 miles, the alternate rail line would curve south for about 3 miles, then southwest for one mile to a point where it would rejoin the proposed Low Corridor rail line alignment. The result is an alternate alignment 2000 to 3000 feet east of the proposed Low Corridor rail line alignment for a length of about 6.5 miles. This alternate avoids the area referred to by SUWA as the NCMA and the mud flats that lie further to the east. Laub *et. al.*, Post Tr. 4653 at 27.

2.67. FEIS Section 2.2.4.2 describes the potential environmental impacts of the west valley rail alternative. Staff Exh. E at 2-49. According to the Staff, the alignment of the west valley rail alternative would follow undulating terrain and, over most of its 6.5 mile length, would be constructed on land with an elevation approximately 100 to 150 feet lower than the Applicant's proposed Low Corridor rail line alignment. Laub *et. al.*, Post Tr. 4653 at 28. The west valley rail alternative would have to be built almost entirely on fill material because of the constraint imposed by a 1.5 percent grade limitation due to locomotive braking and safety considerations. *Id.* The rail bed of the west valley alternative route would therefore have to be built to elevations up to 20 feet above existing grade levels. *Id.* This raised rail bed would have a visual impact and could interfere with the access to existing roads and grazing allotments, the movement of wildlife, and the fighting of wildfires

in the Cedar Mountains and in the western portion of Skull Valley. *Id.* These impacts would exceed the impacts of the proposed Low Corridor rail line. *Id.*

2.68. Staff witness McFarland testified as to the earthwork necessary for the west valley alternative, as follows: For the portion of the west valley rail alternative that deviates from the proposed Low Corridor rail line, the Applicant's analysis shows that the amount of material excavated (cut) is about 560,000 cubic yards less than the amount of material that would be needed for use as embankment (fill) material. *Id.* at 29. As stated above, there would be approximately 255,000 cubic yards of excess material that is excavated for the Low Corridor rail line. *Id.* However, if the 6.5 mile length of the Low corridor rail line that is bypassed by the west valley alternative is deleted from the earthwork analysis, there would be a net loss of approximately 40,000 cubic yards of such excess excavated material. *Id.* Assuming that the remaining excess cut material is available for use as fill for the west valley alternative, as much as 340,000 cubic yards of additional material would need to be brought into the site from another location in order to construct this alternative. *Id.* Importation of this fill material would be very expensive, and would require on the order of 34,000 truck trips along I-80 and local roadways to bring this material to the site. *Id.* In addition, the source of this fill material would need to be identified, and could result in separate environmental impacts. *Id.* These impacts would exceed the cut and fill impacts of the proposed Low Corridor rail line. *Id.*

2.69. Applicant witnesses Donnell and Hayes supported the Staff's position with detailed testimony. Donnell, Post Tr. 4564 at 5-8; Hayes, Post Tr. 4564 at 5-11. SUWA witness Catlin, however, did not address the earthwork implications of the west valley rail alternative. Accordingly, the Licensing Board finds that the west valley rail alternative would require larger earthwork emplacements than the Low Corridor rail line, as described above,

and would have much greater environmental impacts in this regard than the proposed Low Corridor rail line.

2.70. With respect to wilderness issues, Staff witnesses Laub and Stephenson testified that the west valley rail alternative does not cross areas possessing wilderness characteristics. Laub *et. al.*, Post Tr. 4653 at 30. The Staff concluded that the impacts to wilderness values from the proposed Low Corridor rail line do not differ significantly from the impacts expected from the west valley rail alternative. *Id.* at 31. The Staff's conclusion is based on the fact that none of the areas located near the two routes, including the area referred to by SUWA as the NCMA, have any wilderness or wilderness study area designation, and do not contain wilderness values or characteristics. *Id.* The Applicant supports this position. Davis, Post Tr. 4564 at 3-8.

2.71. In response to a question from the Board, Staff witness Stephenson testified that greasewood is native vegetation that is fire resistant, and that BLM's goal is to retain as much native vegetation as they can. Tr. 4668-69. On recross-examination, SUWA witness Catlin stated that the west valley rail alternative would injure some of the greasewood community through which it would cross. Tr. 4958.

2.72. SUWA witness Catlin testified that the west valley rail alternative would have an advantage over the Low Corridor alignment in that it would not traverse the the NCMA. Catlin, Post Tr. 4795, at 7. Having found that the area of the NCMA that the proposed Low Corridor rail line crosses does not have wilderness characteristics, as set forth above, the Licensing Board finds this asserted advantage illusory. Dr. Catlin nonetheless asserts that the west valley alternative would have many of the same impacts as the proposed rail line. *Id.* at 8. His testimony in this regard is set forth below.

2.73. SUWA witness Catlin testified that the proposed Low Corridor rail line could cause several impacts to the wilderness character of the NCMA. *Id.* at 6-7. Some of these

impacts, however, would occur only if an access road were constructed together with the proposed rail line. See *id.* at 7. Since Dr. Catlin did not read the ER or the applications relating to the proposed rail line pending before BLM and STB, he was unaware that no such road is planned. Tr. 4824-25; 4903; 4906-07; see Staff Exhibits Z and AA. In addition, SUWA witness Catlin stated that he assumed that portions of the rail line alignment would be burned to keep them free of vegetation, but admitted that he did not know if the Applicant planned on using such methods. Tr. 4826-27. He also admitted under cross examination that the proposed rail line would not have impacts on springs where the proposed line crosses the NCMA. Tr. 4829. Accordingly, the Licensing Board accords little weight to SUWA witness Catlin's testimony on these impacts.

2.74. The Board asked Dr. Catlin to compare the impacts purportedly associated with the proposed Low Corridor rail line with those that might be associated with the west valley rail alternative. Tr. 4912. Dr. Catlin stated that fire risk in some parts of the two alignments are the same and in other parts might differ. Tr. 4913. He appeared to state that the proposed rail line might pose a greater fire risk than the west valley alternative. *Id.* Dr. Catlin's conclusion in this regard appears to be based on his assumption that controlled burns would be used to keep the proposed Low Corridor rail line free from vegetation. Tr. 4826-27. The ER and FEIS, however, do not indicate that this is the case. See Staff Exh. E, §§ 5.8.4, 2.1.1.3, 5.4.1.1, and 5.4.4.1; Davis, Post Tr. 4564 at 8. Accordingly, the Licensing Board finds that there is no significant difference between the proposed rail line and the west valley alternative with respect to fire risk.

2.75. With respect to runoff patterns, Dr. Catlin admitted that there might be a similarity between the proposed rail line and the west valley alternative, but that he did not know if there would be a difference in runoff patterns between the two. Tr. 4915. With respect to chemicals, Dr. Catlin testified that the two alignment alternatives would be

similar. Tr. 4916. Finally, with respect to springs, Dr. Catlin testified that the two alignment alternatives would have about the same impact, regardless of magnitude. Tr. 4917. Based on the foregoing, the Licensing Board finds that with respect to impacts on runoff, chemical application, and springs, the impacts of the west valley rail alternative would not differ significantly from those of the proposed Low Corridor rail line.

d. Alternative alignment suggested by SUWA

2.76. As set forth above in ¶ 2.28, the Staff analyzed an alternative suggested by SUWA that might run “two miles to the east “ of the proposed Low Corridor rail line. The west valley rail alternative would require as much as 340,000 cubic yards of fill to be imported to the site. Laub *et. al.*, Post Tr. 4653 at 33. According to Staff witness McFarland, this other alternative, located two miles east of the west valley alternative, would require approximately 1.5 times that amount, or approximately 500,000 cubic yards. *Id.* Applicant witness Davis supported this view, and testified that such an alignment would probably be infeasible. Davis, Post Tr. 4564 at 8-9; Donnell, Post Tr. 4564 at 5. SUWA witness Catlin disclaimed any knowledge with respect to this alternative. Tr. 4914-15. He did testify, however, that an alignment routed through mudflats, as this alignment would be, would have a lower risk to spread fire. Tr. 4914. In accordance with the Commission’s decision in *LES*, it is appropriate to accord weight to the Applicant’s determination that this alternative is not reasonable. In view of the foregoing, the Licensing Board finds that other alternatives could be constructed with either less imported fill (*e.g.*, the west valley alternative) or no imported fill at all (*e.g.*, the Low Corridor rail line), and this additional alternative proposed by SUWA would result in greater adverse impacts than such other alternatives, and does not appear to warrant further consideration.

e. Other alternatives

2.77. Dr. Catlin and SUWA did not identify any other rail alignment alternative to the proposed Low Corridor rail line. Tr. 4845-49. SUWA has not offered any evidence disputing the criteria for the design of the proposed rail line established by the Applicant, nor has SUWA identified any alternative to the proposed rail line that meets those criteria. In view of the Staff's analysis of rail alignment alternatives discussed above, no further analysis is necessary. See *Custer County Action Ass'n*, 256 F.3d at 1041.

III. CONCLUSIONS OF LAW

3.1. The Licensing Board has considered all of the evidence presented by the parties on Contention SUWA B (Rail Line Alignment Alternatives). Based upon a review of the entire record in this proceeding and the proposed findings of fact and conclusions of law submitted by the parties, and based upon the findings of fact set forth herein, which are supported by reliable, probative, and substantial evidence in the record, the Board has decided all matters in controversy concerning this contention and reaches the following conclusions.

3.2. Pursuant to NEPA, the Staff, in its FEIS, is required to consider all reasonable alternatives to the proposed action.

3.3. We conclude that in FEIS Section 2.2.4.2, the Staff considered and analyzed two alternative rail alignments (both on the eastern side of Skull Valley, away from the Cedar Mountains), in addition to its consideration of the Low Corridor rail line. See Staff Exh. E at 2-47. In addition, FEIS Section 2.2.4.2 documents the Staff's consideration and analysis of the west valley alternative, an alternative rail alignment that would completely avoid the area referred to by SUWA as the "North Cedar Mountains Area." *Id.* at 2-49 to 2-51.

3.4. For the reasons discussed above, we agree with BLM's determination that, as discussed in FEIS Section 2.2.4.2 (see *id.* at 2-49), the area described by SUWA as the "North Cedar Mountain Area" contains no wilderness values or characteristics. Because the area lacks such values or characteristics, no alternatives need to be developed to avoid or minimize the potential for adverse impacts to such asserted values or characteristics.

3.5. Further, we conclude that the Staff has considered and evaluated a range of alternatives to the proposed Low Corridor rail line, and has adequately described the environmental impacts of each alternative considered. In addition, the FEIS considered alternative rail alignments and the concern expressed by SUWA with respect to the alleged wilderness character and potential wilderness designation of the "North Cedar Mountains Area," and appropriately concluded that a rail alternative that avoids such area would not be environmentally preferable to the Low Corridor rail line.

3.6. Finally, we conclude that the FEIS addresses an appropriate range of reasonable alternatives to the proposed Low Corridor rail line.

Respectfully submitted,

/RA/

Robert M. Weisman
Counsel for NRC Staff

Dated at Rockville, Maryland
this 7th day of June, 2002

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of)	
)	
PRIVATE FUEL STORAGE L.L.C.)	Docket No. 72-22-ISFSI
)	
(Independent Spent)	
Fuel Storage Installation))	

CERTIFICATE OF SERVICE

I hereby certify that copies of the "NRC STAFF'S FINDINGS OF FACT AND CONCLUSIONS OF LAW CONCERNING CONTENTION SUWA B (RAIL LINE ALIGNMENT ALTERNATIVES)" in the above captioned proceeding have been served on the following through deposit in the NRC's internal mail system, with copies by electronic mail, as indicated by an asterisk, or by deposit in the U.S. Postal Service, as indicated by double asterisk, with copies by electronic mail this 7th day of June, 2002:

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