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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

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

APPLICANT'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW ON CONTENTION UTAH R

Pursuant to 10 C.F.R. § 2.754 and the Orders of the Atomic Safety and Licensing Board ("Licensing Board" or "Board") dated February 2, 2000[1] and July 24, 2000,[2] Applicant Private Fuel Storage L.L.C. ("Applicant" or "PFS") submits in the form of a portion of a partial initial decision its proposed findings of fact and conclusions of law concerning Contention Utah R (Emergency Plan) ("Utah R"). PFS's proposed findings on Utah R is submitted separately from its proposed findings on Contentions Utah E/Confederated Tribes F and Utah S pursuant to the Board's Order of July 24. The proposed partial initial decision is organized as follows. Section I, Overview and Conclusion, introduces Contention Utah R and the witnesses for the parties who testified regarding the contention, summarizes the testimony on the contention, and presents proposed conclusions on the contention.[3] Section II, Findings of Fact, presents Applicant's

[1] Order (General Schedule Revision and Other Matters) (February 2, 2000) at 4, Attachment A.

[2] Order (Ruling on Extension Motion) (July 24, 2000).

[3] PFS's proposed findings on Contentions Utah E/Confederated Tribes F and Utah S included a Section I that presented the history of the case to date. Sections I, II, and III of PFS's proposed findings on Utah R correspond to Sections II, III, and IV of PFS's earlier proposed findings.

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proposed findings of fact on the contention, in sequentially numbered paragraphs. Section III, Conclusions of Law, presents Applicant's proposed conclusions of law on the contention, also in sequentially numbered paragraphs.

I. OVERVIEW AND CONCLUSION

A. Contention Utah R (Emergency Plan)

Contention Utah R, which concerns the adequacy of the firefighting support capability PFS will have at the PFSF, was admitted by the Licensing Board with 3 subparts in April 1998. LBP-98-7, 47 NRC at 195-96, 254. Subparts 1 and 2, which concerned the PFS intermodal transfer point ("ITP"), were dismissed upon the dismissal of Contention Utah B. See LBP-99-39, 50 NRC 232.[4]

PFS's testimony on fire protection at the PFSF was provided by fire protection engineer Ken Dungan and Wayne Lewis, Lead Mchanical Egineer with Stone & Webster for the PFSF project. Pre-filed Testimony of Ken Dungan and Wayne Lewis at 1-4 (inserted into the record after Tr. 1456) [hereinafter "Dungan/Lewis"].[5] Mr. Dungan has 30 years of experience in fire protection engineering, including experience with nuclear facilities, and is a past president of the Society of Fire Protection Engineers. Id. at 1-2. He also has experience as a volunteer firefighter and a member of an industrial fire brigade.

[4] Utah R was also the subject of a motion for summary disposition filed by PFS that was denied by the Board on the grounds that a genuine dispute of material fact existed as to whether PFS needed to consider a fire involving a 6,000 gallon spill of diesel fuel from the locomotives that will be used to move spent fuel rail cars on site. Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), LBP-99-36, 50 NRC 202 (1999). PFS subsequently assessed such a fire. See Finding 13, infra.

[5] Appendix A to the partial initial decision (filed with PFS's Proposed Findings of Fact on Contentions Utah E and Utah S) identifies, by witness, the location of written testimony in the transcript. Appendix B (also filed with PFS's earlier proposed findings) lists the exhibits identified and the location in the transcript of the Board's ruling on any offer of an exhibit into evidence.

Id. at 2. Mr. Lewis has 19 years of experience in the nuclear power industry, including 10 years of experience with ISFSIs and experience with National Fire Protection Association ("NFPA") standards and NRC regulations concerning fire protection at nuclear power plants. Id. at 4. He is responsible for establishing the design basis and reviewing all design activities for the fire protection systems at the PFSF. Id. Mr. Dungan and Mr. Lewis testified regarding the entire fire protection program for the PFSF, including the PFS fire brigade and the water supply available for firefighting. Id. at 5-29.

The NRC Staff testimony on the fire protection at the PFSF was provided by Paul W. Lain, a Fire Protection Engineer in the Fuel Cycle Licensing Branch, Division of Fuel Cycle Safety and Safeguards, Office of Nuclear Material Safety and Safeguards, and Randolph L. Sullivan, an Emergency Preparedness Specialist in the Operator Licensing, Human Performance, and Plant Support Branch, Division of Inspection Program Management, Office of Nuclear Reactor Regulation. Pre-filed Testimony of Paul W. Lain and Randolph L. Sullivan at 1 (inserted into the record after Tr. 1543) [hereinafter "Lain/Sullivan"]. Mr. Lain has a masters degree in fire protection engineering and 16 years of experience with the U.S. Navy and the NRC. Id. at Statement of Professional Qualifications. He is the author of the fire protection chapter of the NRC's Standard Review Plan for fuel cycle facilities and currently conducts NRC fire protection licensing reviews for fuel fabrication facilities. Id. Mr. Sullivan is a board certified health physicist with over 25 years of experience in emergency preparedness and radiological protection, both with private industry and the NRC. Id. He currently develops emergency preparedness inspection programs for the NRC and evaluates nuclear facility emergency

plans for compliance with NRC requirements. Id. Mr. Lain's and Mr. Sullivan's testimony provided their evaluation of the fire protection safety at the PFSF and the Applicant's emergency planning with respect to fires and concluded that the Applicant met all relevant NRC requirements. Id. at 3-21.

The State's testimony on the fire protection at the PFSF was provided by Utah State Fire Marshal Gary A. Wise. Pre-filed Testimony of Gary A. Wise at 1 (inserted into the record after Tr. 1588) [hereinafter "Wise"]. While Mr. Wise has no particular experience evaluating the adequacy of the fire protection of a nuclear facility or the adequacy of a private or industrial fire brigade, he has been a professional municipal firefighter for over 30 years. Id. at 1-3; Tr. 1624-26, 1628-29 (Wise). Mr. Wise's testimony challenged the number of personnel that the Applicant would have available to fight fires at the PFSF site and the adequacy of their training, but did not otherwise challenge PFS's fire protection or emergency plan. Wise at 3-10.

Based on evaluation of all the evidence in the record, the Licensing Board finds that fire protection for the PFSF and PFS's emergency planning with respect to fire, to include the proposed staffing and training of the PFS fire brigade, meet all applicable NRC requirements. The Board's specific findings on this issue are set forth below.

II. FINDINGS OF FACT

A. Contention Utah R

1. In Contention Utah R, the State alleges that:

> The Applicant has not provided reasonable assurance that the public health and safety will be adequately protected in the event of an emergency at the storage site in that PFS has not adequately de-

> scribed the means and equipment for mitigation of accidents because it does not have adequate support capability to fight fires onsite.

Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), LBP-99-39, 50 NRC 232, 240 (1999) (as revised after the dismissal of Contention Utah B). In the bases supporting the contention, the State had alleged that the PFS Emergency Plan "does not state whether sufficient water is available to fight a fire of any consequence and does not describe the program for maintaining any [firefighting] equipment."[6]

2. NRC fire protection regulations for ISFSIs, 10 C.F.R. § 72.122(c), require:

> (c) *Protection against fires and explosions.* Structures, systems, and components important to safety must be designed and located so that they can continue to perform their safety functions effectively under credible fire and explosion exposure conditions. Noncombustible and heat-resistant materials must be used wherever practical throughout the ISFSI or MRS, particularly in locations vital to the control of radioactive materials and to the maintenance of safety control functions. Explosion and fire detection, alarm, and suppression systems shall be designed and provided with sufficient capacity and capability to minimize the adverse effects of fires and explosions on structures, systems, and components important to safety. The design of the ISFSI or MRS must include provisions to protect against adverse effects that might result from either the operation or the failure of the fire suppression system.

3. NRC emergency planning regulations for ISFSIs are intended to provide protection against radiological hazards. They require a license applicant's emergency plan to include: "A brief description of the means of mitigating the consequences of each type of accident, including those provided to protect workers onsite, and a description of the program for maintaining the equipment." 10 C.F.R. §

[6] State of Utah's Contentions on the Construction and Operating License Application by Private Fuel Storage, LLC for an Independent Spent Fuel Storage Facility (Nov. 23, 1997) at 121.

72.32(a)(5). The "[t]ypes of accidents" for which an applicant must describe the means for mitigating consequences, however, are not any type of accident, but are defined by 10 C.F.R. § 72.32(a)(2) as "radioactive materials accident[s]." With respect to fire, the Commission has stated that the scope of NRC emergency planning regulations (and thus the scope of Utah R) is limited to "the hazards associated with nuclear materials rather than to all questions of fire safety at licensed facilities." The Curators of the University of Missouri, CLI-95-1, 41 NRC 71, 159 (1995); The Curators of the University of Missouri, CLI-95-8, 41 NRC, 386, 393 (1995).[7] "It is, of course, true that the Commission's radiation-protection mission requires it to consider questions of fire safety, but this does not convert the Commission into the direct enforcer of local codes, OSHA regulations, or national standards on fire safety, occupational safety, and building safety." Id.

4. Moreover, longstanding NRC case law holds that emergency plan implementing procedures are not required in a license application and hence are not litigable in NRC licensing proceedings. Louisiana Power and Light Company (Waterford Steam Electric Station, Unit 3), ALAB-732, 17 NRC 1076, 1106-07 (1983); see Curators of the University of Missouri, CLI-95-1, 41 NRC at 130-131, 137, 140-143. The implementing procedures contain "how-to and what-to-do" details over which the Commission did not intend hearings to become bogged down. Waterford, ALAB-732, 17 NRC at 1107.

[7] See also 51 Fed. Reg. 19,106, 19,109 (1986) (Statement of Considerations for proposed rule that ultimately became sections 72.32(a)(2) and (a)(5)) (emergency plan must protect against "accidental releases of radioactive materials" and "radiation hazards").

1. The PFSF Site

5. The PFSF site is depicted in PFS Exhibit A. As shown in Exhibit A, the spent fuel storage casks will be located on concrete storage pads within the PFSF Restricted Area, with a crushed rock surface one foot deep surrounding the storage pads and extending throughout the Restricted Area. The Restricted Area will cover 99 acres and will also include the Canister Transfer Building (CTB), where spent fuel transportation casks will be delivered, either by rail or by heavy haul truck. In the CTB, the spent fuel canisters will be transferred from the transportation casks to storage casks and then moved out to the concrete storage pads. Dungan/Lewis at 5; see also Lain/Sullivan at 5-7.

6. The significant sources of combustible material at the PFSF will consist of:

- The diesel fuel in the fuel tank of the cask transporter vehicle
- The diesel fuel in the fuel tanks of heavy haul trucks (if used)
- The tires on the heavy haul trucks (if used)
- The fuel and tires of maintenance, security, or other emergency vehicles
- The fuel and tires on a diesel fuel delivery truck
- The fuel and tires of vehicles such as the cars of visitors that will not enter the PFSF Restricted Area
- The diesel fuel in the fuel tanks of locomotives (if used)
- The diesel fuel for the backup generator in the Security & Health Physics Building
- The diesel fuel for the backup water pump located outside the Restricted Area
- The diesel fuel storage tank for the cask transporter vehicle located inside the Restricted Area
- The diesel fuel storage tank for the heavy haul trucks (if used) and onsite vehicles located outside the Restricted Area

- The propane storage tanks located outside the Restricted Area, 1,800 ft. from the CTB and the cask storage area
- Gasoline stored in cans in the Operation & Maintenance Building for use in groundskeeping equipment

Dungan/Lewis at 6-7; Tr. 1535 (Lewis); see also Lain/Sullivan at 7-8.

2. Fire Protection at the PFSF

7. The fire protection measures for the PFSF employ the defense-in-depth concept by minimizing the likelihood of fires; by providing detection systems and automatic and manual suppression systems for fires that may occur; and by providing compartmentalization and spill control to prevent the spread of fire; and structural fire resistance. PFS has committed to adhering to the standards of NFPA 801 in providing fire protection for the PFSF. NFPA 801 is a national consensus standard, developed with NRC participation, for providing fire protection for nuclear materials facilities. Dungan/Lewis at 7.

8. Regarding the structures, processes, and components at the PFSF, no combustibles are needed or used to move spent fuel, with the exception of diesel fuel for vehicles (and the vehicles' tires). The structural materials, as well as the crushed rock surface within the Restricted Area, are noncombustible and the building walls have fire resistance properties. Ignition sources are unnecessary as part of this facility's operation. Electrical equipment for lighting, ventilation, and cranes present a limited risk of small localized fires. Dungan/Lewis at 8; see Lain/Sullivan at 8-9.

9. The CTB, where spent fuel canisters will be transferred between transportation and storage casks, is constructed of steel-reinforced concrete and is depicted in

PFS Exhibit B. It is a large building, approximately 260 ft. long by 205 ft. wide at the widest point. Spent fuel transportation casks are brought into the building in the cask load/unload bay at the south end of the building. The cask load/unload bay is 205 ft. long by 50 ft. wide with a 90 ft. ceiling over the center portion to accommodate the building's overhead crane and semi-gantry crane, and a 30 ft. ceiling over the east and west ends. The cask load/unload bay will be protected by a foam-water sprinkler system that will be activated automatically, by a flame detection system and/or by fusible elements in sprinkler heads. Dungan/Lewis at 8.

10. Transportation casks will be lifted by the overhead bridge crane and carried out of the cask load/unload bay, through the crane bay and into the transfer cells. Dungan/Lewis at 8; see PFS Exh. B and C. Sumps and a spill retention threshold will keep any diesel fuel spilled from a truck in the cask load/unload bay out of the crane bay, away from a transportation cask, and away from the transfer cells. The cask load/unload bay is separated from the interior of the transfer cells by a 30 ft. high concrete wall one foot thick. In the transfer cells the spent fuel canisters will be transferred from the transportation casks to the storage casks. During a transfer operation the cask transporter vehicle (which moves the storage casks between the CTB and the storage pads) will be excluded from the transfer cells by administrative procedure and the closed vehicle access doors on each of the cells; during the transfer operation it will remain in the cask transporter bay. Thus, during the transfer, there will be no significant combustible materials in the transfer cells.

As indicated in PFS Exhibit C, the building walls that separate the transfer cells from the cask load/unload bay, the crane bay, and the cask transporter bay are of fire resistant construction. The crane bay, and transfer cells will be protected by smoke detectors, portable extinguishers, and hose stations for manual suppression by trained personnel. Id. at 8-9.

11. The CTB will be protected from potential locomotive fuel spills and fires by excluding the locomotives from the interior of the CTB and sloping of the ground near the entrance to the CTB cask load/unload bay away from the building to keep any spilled fuel out of the building. In addition to administrative controls, rail stops are clamped onto the rails in the CTB to provide assurance that a locomotive cannot enter the CTB. Storage casks on the concrete storage pads are protected by virtue of being separated from the railroad tracks by a distance of approximately 110 ft. and by the slope of the ground near the tracks, away from the storage pads, that would isolate a spill of diesel fuel from a locomotive from the pads. The storage casks and the CTB are protected from other potential diesel fuel spills at the PFSF (e.g., from the backup diesel generator fuel tank, the diesel-driven water pump fuel tank, the diesel fuel storage tank located in the Restricted Area, or the diesel fuel storage tank located near the Operations & Maintenance Building) by virtue of the distance separating the casks from the sources of the diesel fuel. Dungan/Lewis at 9.

12. To supplement the fire protection provided by the design of the PFSF and the automatic fire suppression system, PFS will also have a fire brigade on site. The

brigade will be trained and equipped to appropriate NFPA standards. Dungan/Lewis at 9.

3. Fire Scenarios at the PFSF

13. PFS assessed the effectiveness of the fire protection at the PFSF by calculating the effects of various bounding scenarios that represent the worst credible fires that could occur at the PFSF. Dungan/Lewis at 10-11, 17-18, 22-23; Lain/Sullivan at 10. The scenarios consisted of: 1) a fire involving a spent fuel storage cask and 50 gallons of diesel fuel from a cask transporter vehicle, Dungan/Lewis at 12-14; 2) a fire involving a spent fuel transportation cask in the CTB and 300 gallons of diesel fuel plus one axle of tires from a heavy haul truck, id. at 14-17; and 3) a fire involving 6,400 gallons of diesel fuel spilled outside the CTB from the tanks of two mainline locomotives, id. at 18-21; Tr. 1517-18, 1522-24 (Lewis). In each of the scenarios, PFS showed that the fire would not cause a release of radioactive material from a spent fuel storage cask, a spent fuel transportation cask, or a spent fuel transfer cask, without reliance on automatic or manual fire suppression. Dungan/Lewis at 13-14, 16-17, 20-21; Lain/Sullivan at 9-12; Tr. 1522-24 (Lewis), 1664-65 (Dungan). Nor would a fire threaten the integrity of the CTB. Dungan/Lewis at 16-17, 21; Lain/Sullivan at 12; Tr. 1664-65 (Dungan).

14. The scenarios analyzed bound the other credible fires at the PFSF because of the larger quantity of fuel in the analyzed scenarios and the closer distance between the fires in the analyzed scenarios and the spent fuel storage, transportation, and transfer casks. Dungan/Lewis at 17-18, 22-23. Thus, the analyzed scenarios

bound the consequences of fires involving other vehicles present at the PFSF, id. at 17-18, and the diesel storage tanks at the PFSF, id. at 22-23.

15. Fires involving a propane tank at the PFSF would not cause a release of radioactive material because of the separation distance between the propane tanks and the spent fuel. Dungan/Lewis at 24-25. The propane systems at the PFSF will be designed in accordance with NFPA 58 and the tanks will be small enough and far enough away from the spent fuel that a propane explosion powerful enough to damage a spent fuel storage cask or the CTB is not credible. Id. at 23-24; Tr. 1529-33 (Dungan), 1535 (Lewis). The propane heaters for the CTB will be designed in accordance with NFPA 54 and the propane will not enter the building; thus heaters do not present a significant fire hazard. Dungan/Lewis at 25.

16. In-situ combustibles at the PFSF would not present a significant fire hazard. In-situ combustibles are few in types and quantities. Fires involving them would be mostly small electrical fires. Small electrical fires cannot generate enough energy to propagate in the structures and would not pose a threat to any of the spent fuel storage configurations at the PFSF. Furthermore, outside the electrical equipment room, all electrical cable will be encased in conduit (or duct bank), which will protect against potential electrical fires. Dungan/Lewis at 25.

17. Therefore, no credible fire exposure at the PFSF could cause a release of radioactive material, since the fire hazards, even unmitigated, are not severe enough to breach the spent fuel confinement. Dungan/Lewis at 29.

4. The PFSF Fire Brigade

18. The PFSF fire brigade will provide a response to fire emergencies with a minimum of 5 personnel, who will be trained and equipped as a structural fire brigade in accordance with all aspects of NFPA 600, Standard on Industrial Fire Brigades (Staff Exhibit B). Dungan/Lewis at 26; Tr. 1509, 1528-1529 (Lewis), 1606, 1609-11 (Wise); PFS Exh. G at EP p. 4-3. Thus, brigade training will include, among other things, the fighting of interior structural fires. NFPA 600 Ch. 5; Tr. 1606, 1609-10 (Wise). A brigade of 5 members will be sufficient to meet the requirement of NFPA 600 that two brigade members remain outside a building while two members fight a fire inside the building while wearing self-contained breathing apparatus (SCBA). Tr. 1666 (Dungan); see NFPA 600 § 5-3.5. Brigade personnel will come from PFSF staff other than the security force, at least 11 of whom will be fully trained to participate on the fire brigade. Dungan/Lewis at 27; Tr. 1498-99, 1507, 1525 (Lewis); PFS Exhibit G at EP pp. 4-3, 6-2.

19. The fire brigade role would be to extinguish fires too small to actuate the automatic suppression systems, and to ensure that fires are out and perform salvage operations to minimize post-fire damage. The brigade will also provide support to ensure fire pumps are running, personnel evacuate properly and utilities (power and fuel) are shut off as appropriate. For outside fires, the brigade's role in most cases will be to control the burning to limit fire exposures and to suppress a transporter or other vehicle fire in the unlikely event of an occurrence that cannot be handled by the vehicle driver. Dungan/Lewis at 26. The fact that fire brigade

members will have operational duties at the PFSF will not interfere with their participation on the fire brigade, in that personnel with operational duties would be able to promptly but safely suspend their operational activities and participate on the brigade. Tr. 1526-27 (Lewis), 1566 (Sullivan). While PFS has coordinated with Tooele County regarding the potential use of off-site emergency response resources, PFS Exhibit G at SAR p. 9.5-2, Tr. 1547-50 (Lain/Sullivan), PFS does not need to rely on such resources, in that PFS will be self-sufficient in its firefighting capabilities. Tr. 1470-72 (Lewis), 1546-47 (Lain/Sullivan), 1550 (Lain).

20. The State of Utah asserted that NFPA 1500, rather than NFPA 600, is the appropriate standard to which the PFSF fire brigade should be trained and equipped. Wise at 8-10. We agree with the Applicant and the NRC Staff, however, that NFPA 600 is appropriate for industrial brigades that will fight fires at a particular facility, like the PFSF, involving a defined set of hazards with which the brigade members will be familiar, as opposed to municipal fire departments, which may fight fires involving a wide range of locations and hazards. Tr. 1611-1612, 1615-18 (Wise). NFPA 600 states:

> This standard shall apply to any organized private, industrial group of employees having fire fighting duties, such as emergency brigades, emergency response teams, fire teams, and plant emergency organizations.

NFPA 600 § 1-1.2.

> This standard shall not apply to industrial fire brigades that respond to fire emergencies outside the boundaries of the industrial facility when the off-site fire involves unfamiliar hazards or en-

> closed structures with layout and contents that are unknown to the fire brigade.

Id. § 1-1.3.

> The primary difference between industrial fire brigades and municipal fire departments is that industrial fire brigades must deal with conditions and hazards that are limited to those that exist within a given facility that is generally privately owned and operated. Although these site-specific hazards can and do represent the same degree of hazard to both industrial fire brigade members and municipal firefighters, industrial fire brigade members are not usually concerned with, nor are they expected to deal with, hazards and emergencies beyond the boundaries of the facility that the brigade serves.
>
> . . . . .
>
> The distinct advantage of familiarity achieves a higher level of *industrial* fire brigade safety and allows for the fundamental difference between a municipal fire department and an industrial fire brigade.

Id. § A-1-1 (emphasis in original). Because the PFSF fire brigade, an industrial brigade, will only be responsible for fighting fires at the PFSF and will be trained to deal with the specific hazards at the PFSF, we find that NFPA 600 is the appropriate standard to apply to it. See Tr. 1521 (Dungan); Lain/Sullivan at 14, 18-20.

21. NFPA 1500, Standard on Fire Department Occupational Safety and Health Program (State Exhibit 8), by contrast, is appropriate for municipal fire departments that may fight fires at a range of locations involving a variety of hazards, with which department members most likely will not be familiar. Tr. 1521 (Dungan), 1612, 1615-18 (Wise). Indeed, NFPA 1500 clearly distinguishes the two standards: "This standard does not apply to industrial fire brigades or industrial fire

departments meeting the requirements of NFPA 600, *Standard on Industrial Fire Brigades*." NFPA 1500 § 1-1.3.

22. In addition to fire brigade members receiving training as specified by NFPA 600, all PFS employees, including security force members, will receive fire protection training as part of general employee training (GET). Tr. 1512 (Lewis); PFS Exh. G at SAR p. 9.3-3. This training will include basic knowledge and skills, such as the types of fires, the reporting of fires to PFSF security, and the fighting of fires with manual fire extinguishers where reasonably practicable. Tr. 1512 (Lewis).

23. The State also challenged PFS's emergency plan with respect to the fire brigade in that it did not include an organizational statement as called for by NFPA 600. Wise at 5-6. We find, however, that the provision of an organizational statement is not necessary at this juncture. PFS has committed to complying fully with NFPA 600 and thus it will provide a brigade organizational statement as part of the implementation of its emergency plan. Implementation of the plan, as opposed to the plan itself, is not subject to litigation in NRC licensing proceedings. Finding 4, supra.

24. The State challenged the adequacy of PFS's fire brigade on the grounds that it would not be present during off-hours. Wise at 6-7. Scenarios requiring a prompt fire brigade response at the PFSF, however, are only credible during normal hours, as opposed to off-hours, when no operations are underway. Dungan/Lewis at 26-27; Tr. 1512-13, 1528-29 (Lewis), 1568 (Lain/Sullivan). The heavy haul trucks, spent fuel cask transporters, and locomotives will not operate during off-

normal hours. Thus the engines of those vehicles will not provide potential ignition sources for spilled diesel fuel. Dungan/Lewis at 11. Electrical fires would not pose a hazard in that electrical fires are unlikely in the first place and most electrical equipment at the PFSF will not be used during off-hours. Moreover, even if an electrical fire were to occur, it would not require a prompt response, in that the absence of other combustibles at the site would preclude an electrical fire from threatening the integrity of a spent fuel canister or the structural integrity of the CTB. Dungan/Lewis at 26-27.

25. In the event of a fire at the PFSF during off-hours, security personnel would employ a call-in procedure to muster fire brigade members from off-site to respond to the fire. The role of PFSF security personnel, who will be trained in fire assessment, would be to assess the fire and promptly notify the fire brigade. Security personnel will not, however, and will not need, to participate on the fire brigade. Dungan/Lewis at 27; Tr. 1515 (Lewis); see PFS Exh. G at EP p. 6-2.

5. PFSF Fire Trucks

26. PFS will have use of two fire trucks, one on site and one stationed at the Skull Valley Band of Goshute village. Dungan/Lewis at 26. The fire trucks are not necessary to respond to any fire emergencies inside the PFSF Restricted Area and thus are not needed to prevent damage to a spent fuel cask or canister. Because the site has an adequate and reliable water supply (see Dungan/Lewis at 28-29), the trucks function as a way to bring additional hose for use with hydrants, nozzles, breathing apparatus, etc. Dungan/Lewis at 27; Tr. 1534 (Lewis); see also Tr.

1501-06 (Dungan/Lewis). All PFS personnel trained to participate on the fire brigade will also be trained to drive and operate the fire trucks. Tr. 1525 (Lewis); PFS Exh. G at EP p. 6-2. Some additional staff members with the ability to drive heavy equipment would also be able to drive the trucks. Tr. 1525-26 (Lewis).

6. PFSF Water Supply

27. The PFSF water supply for firefighting will consist of two tanks of 100,000 gallons each and two fire pumps. The CTB cask load/unload bay is to be protected by a foam-water sprinkler system in accordance with NFPA 16. The PFSF will also have hose stations inside the buildings on-site, designed and located in accordance with NFPA 14, and fire hydrants outside the buildings on-site, designed and located in accordance with NFPA 24. Dungan/Lewis at 28. Under NFPA 16 guidelines, one tank would be sufficient to meet all the firefighting needs at the PFSF. Id. at 28-29; Tr. 1518 (Lewis), 1575 (Lain); see Lain/Sullivan at 13. As recommended by NFPA 801, the second tank serves as a backup for the first. Dungan/Lewis at 28-29.

7. Maintenance of PFSF Fire Protection Equipment.

28. The fire protection equipment at the PFSF, including the CTB foam-water system, yard hydrants, fire pumps, water storage tank, service mains, and all associated components will be maintained in accordance with NFPA 25. The PFSF fire detection system will be installed and maintained in accordance with NFPA 72. Dungan/Lewis at 29. Fire brigade equipment will be maintained in accordance with NFPA 600. Lain/Sullivan at 14-15.

8. Conclusion

29. The Licensing Board concludes that the fire protection measures proposed for the PFSF provide adequate protection against the effects of credible fires at the site. The fire protection measures also sufficiently provide for the mitigation of the consequences of fire and include a program for maintaining fire protection equipment. More specifically, the proposed training and staffing of the PFS fire brigade and the proposed water supply for the PFSF, in conjunction with the other fire protection measures at the facility, will provide adequate protection against fire.

III. CONCLUSIONS OF LAW

A. Contention Utah R

1. Under 10 C.F.R. § 72.122(c), PFS will have adequate support capability to fight fires at the PFSF site.

2. Under 10 C.F.R. § 72.32(a)(5), the PFS license application contains an adequate description of the means of mitigating the consequences of fire at the PFSF, including means provided to protect workers onsite, and it contains an adequate description of the program for maintaining fire protection equipment.

IV. CONCLUSION

The Applicant respectfully requests that the Board rule in favor of the Applicant on Contention Utah R.

Respectfully submitted,

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August 7, 2000

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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CERTIFICATE OF SERVICE

I hereby certify that copies of the "Applicant's Proposed Findings of Fact and Conclusions of Law on Contention Utah R" was served on the persons listed below (unless otherwise noted) by e-mail with conforming copies by U.S. mail, first class, postage prepaid, this 7th day of August 2000.

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