June 28, 1999

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
	)	
(Private Fuel Storage Facility)	)	

APPLICANT'S MOTION FOR PARTIAL SUMMARY DISPOSITION OF UTAH CONTENTION R – EMERGENCY PLAN

Applicant Private Fuel Storage L.L.C. ("Applicant" or "PFS") files this motion for partial summary disposition of Contention Utah R – "Emergency Plan," ("Utah R") pursuant to 10 C.F.R. § 2.749. Summary disposition is warranted on the grounds that there exists no genuine issue as to any material fact relevant to the contention and, under the applicable Commission regulations, the Applicant is entitled to a decision as a matter of law. This motion is supported by a statement of material facts and affidavits or declarations from Jeffrey Johns, Ram Srinivasan, Krishna Singh, Carlton Britton, Jerry Cooper and Wes Jacobs and related exhibits.[1]

[1] The declarations of Jeffrey Johns and Ram Srinivasan are attached to this motion; the other declarations and affidavits were submitted in support of PFS's motion for summary disposition of Contention Utah K and are incorporated by reference here.

I. STATEMENT OF THE ISSUES

On April 22, 1998, the Atomic Safety and Licensing Board ("Licensing Board" or "Board") admitted Utah R. Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 192 (1998). The contention, as admitted, in pertinent part, asserts 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 or the transfer facility in that:
>
> . . . . .
>
> 3. PFS has not adequately described the means and equipment for mitigation of accidents because it does not have adequate support capability to fight fires onsite.

Id. at 254.[2]

In its bases for Utah R, the State claimed that PFS "has not provided details to 'describe the means and equipment provided for mitigating the consequences of each type of accident' as provided by Reg. Guide 3.67 § 5.3 and 10 CFR § 72.32(a)(5)." Utah Contentions at 120.[3] The State asserts specifically that the PFS Emergency Plan "states that fire fighting capability is available on-site which includes a fire truck and fire fighting equipment but does not state whether sufficient water is available to fight a fire of any

[2] PFS is not moving for summary judgment of parts 1 and 2 of Utah R, which relate to the intermodal transfer point (ITP) near Rowley Junction. In admitting Utah R, the Board stated that "[i]n admitting this contention as it relates to the Rowley Junction ITP, we note that further litigation on its merits may be subject to any merits disposition of [Contention] Utah B." Private Fuel Storage, LBP-98-7, 47 NRC at 196 n.18. PFS's June 11 motion for summary disposition of Utah B, if granted, would result in dismissal of the first two subparts of Utah R.

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

consequence and does not describe the program for maintaining any equipment." Id. at 121. The State asserts further that "whether the storage tanks [to be located at the PFSF] could hold sufficient water for a serious fire must be further examined, especially since the Applicant has identified the use of a fire truck at the site, another fire truck available from the reservation, as well as trucks supplied by Tooele County Fire Department, all of which may need access to the water tanks in a widespread difficult fire situation." Id.

The Applicant moves for partial summary disposition of Utah R on the grounds that the adequacy of the PFSF water supply (and firefighting generally) is immaterial to the decision the NRC must make regarding the adequacy of the PFS Emergency Plan ("EP"), in that the PFSF is designed to withstand the effects of credible fires without fire-fighting by personnel or the operation of any automatic fire detection/suppression system. Therefore, no genuine dispute remains concerning any material issue and PFS is entitled to judgment as a matter of law.

II. LEGAL BASIS

PFS has set forth the relevant law governing summary disposition at some length in its previous motions for summary disposition, and the legal basis provided in those motions is incorporated by reference herein. See Applicant's Mot. Summ. Disp. Utah C at 4-16 (April 21, 1999); Applicant's Mot. Summ. Disp. Utah F&P at 2-3 (June 11, 1999). The State may file affidavits purporting to contain expert opinions in opposition to this motion. Therefore, the legal requirements concerning such, Applicant's Mot. Summ. Disp. Utah C at 10-15 and Applicant's Mot. Summ. Disp. Utah F&P at 2-3, may be particularly relevant here. These requirements include 1) demonstration of the affiant

as an expert, and 2) an explanation of facts and reasons in the affidavit supporting the affiant's expert's opinion.

III. PFS IS ENTITLED TO PARTIAL SUMMARY DISPOSITION OF UTAH R

PFS is entitled to summary disposition of Utah R because the State's assertions regarding the water supply at the PFSF, and firefighting at the PFSF generally, are immaterial to the determination the NRC must make regarding the adequacy of the means of mitigating the consequences of accidents that PFS must describe in the EP. In fact, PFS does not need to provide for the active mitigation of the consequences of fire at the PFSF, in that the PFSF is designed so that no credible fire could cause a significant radioactive release, even without <u>any</u> firefighting by personnel or the operation of <u>any</u> automatic fire detection/suppression system. NRC regulations only require PFS to show how it will mitigate the consequences of potential <u>radiological</u> accidents at the PFSF. Thus, PFS has met the requirements and is entitled to summary disposition.

NRC emergency planning regulations for ISFSIs are intended to provide protection against radiological hazards, not accidents generally. 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. § 72.32(a)(5). The "type[s] of accident[s]" 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]." Indeed, in the Statement of

Considerations for the proposed rule that contained the sections that ultimately became sections 72.32(a)(2) and (a)(5), the Commission stated:

> A licensee's emergency plan must assure that (1) a capability exists for measuring and assessing the significance of accidental releases of radioactive materials [and] (2) appropriate emergency equipment and procedures are provided onsite to protect workers against radiation hazards that might be encountered following an accident . . . .

51 Fed. Reg. 19,106, 19,109 (1986) (emphasis added).[4]

Thus, under section 72.32(a)(5), PFS only needs to describe the means of mitigating the consequences of each type of radiological accident at the PFSF. As shown below, PFS has described the means of mitigating the potential for fire to cause a radiological accident, in that the PFSF is designed to prevent fire from causing a significant radiological release, even without any firefighting by personnel or the operation of any automatic fire detection/suppression system like a water sprinkler. Therefore, the issue of the adequacy of the PFSF water supply raised by the State in Utah R (and the issue of firefighting generally) is immaterial to the determination the NRC must make regarding the adequacy of PFS's emergency plan. Hence, PFS is entitled to summary disposition of this portion of Utah R.

[4] The portion of the 1986 proposed rule concerning emergency planning was withdrawn and republished in 1993 to provide different emergency planning requirements for ISFSIs and monitored retrievable storage (MRS) installations, but the objective of the rule remained "to protect the public against . . . radiological hazards." 58 Fed. Reg. 29,795, 29,797 (1993); see also 53 Fed. Reg. 31,651, 31,653 (1988) (Part 72 Final Rule); id. at 31,654 ("The primary purpose of an emergency response plan is to prescribe measures to be taken to mitigate the effects of accidental releases of radioactivity . . . ."); Regulatory Guide 3.67, Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities (Jan. 1992), at 4 ("Identify and describe each type of radioactive materials accident . . . .").

PFS has analyzed the potential impact of fire on the PFSF and the spent fuel casks that would be located there and has shown that fire does not have the potential to cause a significant radioactive release. PFS analyzed the impacts of fires involving the total capacity (50 gallons) of diesel fuel from the fuel tanks of the PFSF cask transporter vehicle, both outside the Canister Transfer Building and inside one of the three canister transfer cells inside the Canister Transfer Building. Safety Analysis Report (SAR) at 8.2-25 to –28; Johns Dec. at ¶¶ 5-6. PFS also analyzed the impact of a fire involving the total capacity (300 gallons) of diesel fuel from the saddle tanks of a heavy haul vehicle tractor inside the cask load/unload bay in the Canister Transfer Building. SAR at 8.2-25 to –27; Johns Dec. at ¶¶ 5, 8-10. And PFS analyzed the potential impact of a fire involving the diesel fuel from the locomotive outside the Canister Transfer Building. Johns Dec. at ¶¶ 12-13. PFS evaluated only the foregoing fires in detail because they represent the only instances in which a significant quantity of combustible material would be near a spent fuel storage cask. Johns Dec. at ¶ 5; SAR at 8.2-24 to –25.[5]

PFS's analyses of fires resulting from postulated 50-gallon diesel fuel spills from the cask transporter vehicle showed that the fires would last no more than 5 minutes and would produce maximum temperatures less than 1475 °F. Johns Dec. at ¶ 7; see SAR at 8.2-25;. By virtue of the fires' short duration and the temperatures they would produce,

[5] PFS will have a diesel fuel storage tank inside the Restricted Area, approximately 200 ft. northeast of the Canister Transfer Building and 700 ft. east of the nearest concrete storage pads, and a diesel fuel tank for the emergency generator in the Security and Health Physics Building, over 350 ft. from the canister transfer building and over 950 ft. from the concrete storage pads. Cooper Aff. at ¶¶ 9, 12. Because those tanks are so far away, fires involving the fuel in them would not cause a radioactive release from any spent fuel cask or canister at the PFSF. Id. at ¶ 12.

they would not cause a radioactive release from a spent fuel storage cask, either outside the Canister Transfer Building or inside a canister transfer cell inside the building. Johns Dec. at ¶ 7; Singh Aff. at ¶ 3; Srinivasan Dec. at ¶ 6; SAR at 8.2-26, -28.

Similarly, PFS's analysis of a fire resulting from a postulated 300-gallon diesel fuel spill from a heavy haul truck tractor in the Canister Transfer Building cask load/unload bay shows that such a fire would last less than 10 minutes and would also produce a maximum temperature less than 1475 °F., even without any firefighting by personnel or the operation of any automatic fire detection/suppression systems such as the water sprinkler. Johns Dec. at ¶¶ 8-10.[6] Therefore, such a fire would not threaten any system, structure, or component (SSC) important to safety at the PFSF in a way that could cause a radioactive release. Johns Dec. at ¶ 10. The only credible impact such a fire might have would be to cause the loss of electrical power to the SSCs, but PFS has shown that such a loss would not cause a radioactive release. Id.; SAR § 8.1.1.3.[7]

PFS's analysis of the potential effect of a fire involving the diesel fuel from the locomotive outside the Canister Transfer Building showed that the fire would not cause a radioactive release from a spent fuel storage cask at the PFSF, even without any firefighting by personnel or the operation of any automatic fire detection/suppression sys-

[6] While the SAR's evaluation relied on operation of the automatic fire detection and suppression systems to extinguish the fire in less than 15 minutes, the analysis in Johns' declaration demonstrates that the systems are not necessary to prevent a radioactive release. Johns Dec. at ¶ 8-11; SAR § 8.2.5.2. Nevertheless, the Canister Transfer Building cask load/unload bay will have an automatic sprinkler system that would likely extinguish the fire in a shorter time than it would take to consume all the spilled fuel. SAR at 8.2-27.

[7] PFS did not analyze the effect of 300-gallon diesel fires on spent fuel storage casks, in that the spent fuel storage casks at the PFSF will be located either on the concrete storage pads or in a canister transfer cell, but never in the cask load/unload bay. Johns Dec. at ¶ 11; see SAR at 8.2-26 to –27; id. at 5.1-4 to –6.

tem.[8] Johns Dec. at ¶¶ 12-13. Such a postulated fire could only occur near the PFSF rail line, which will be over 100 ft. from the nearest spent fuel storage casks on the concrete storage pads at the PFSF. Johns Dec. at ¶ 13. Thus, the heat flux impinging on a storage cask from the fire would be much less than the heat flux that would impinge on a storage cask from a 50-gallon diesel fuel fire engulfing a cask. Id. Since PFS has shown above that a 50-gallon fire would not cause a radioactive release from a storage cask, the fire involving the fuel from the locomotive would also not cause a radioactive release from the cask. Id.

PFS analyzed the potential effect of wildfires adjacent to the PFSF Restricted Area (where the spent fuel casks and the Canister Transfer Building will be located) in its motion for summary disposition of Contention Utah K and showed that wildfires could not burn within the Restricted Area, because of the lack of combustible materials therein, and that wildfires would therefore not cause any significant harm to the spent fuel casks or any other system important to safety at the PFSF.[9]

Therefore, PFS has shown that fire at the PFSF would not cause a significant radioactive release, even without any firefighting by personnel or the operation of any

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[8] The diesel fuel from the locomotive could not cause a fire inside the Canister Transfer Building because PFS administrative procedures will not allow the locomotive to enter the building and the design of the building will not allow spilled diesel fuel to run into the building from the outside. Johns Dec. at ¶ 11; SAR § 8.2.5.1.

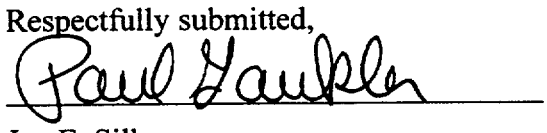
[9] Johns Dec. at ¶ 15; Applicant's Motion for Partial Summary Disposition of Utah Contention K and Confederated Tribes Contention B (June 7, 1999), at 18-20. Wildfires would not cause significant harm even without firefighting by personnel or the operation of any automatic fire detection/suppression system such as a water sprinkler. Johns Dec. at ¶ 15; see Applicant's Mot. Part. Summ. Disp. Utah K/Confederated Tribes B at 18-20 and references to affidavits of Carlton Britton, Jerry Cooper, Wesley Jacobs, Krishna Singh, and Ram Srinivasan attached to that motion.

automatic fire detection/suppression system such as a water sprinkler. No credible fire at the PFSF would threaten the integrity of a spent fuel storage cask or threaten any other SSCs important to safety in a way that could cause such a release. Johns Dec. at ¶ 14; Cooper Aff. at ¶¶ 13-14; Jacobs Aff. at ¶¶ 5-6. Thus, the adequacy of the PFSF water supply (and PFSF firefighting generally) is immaterial to the decision the NRC must make under its emergency planning regulations as to the adequacy of PFS's description of the means of mitigating the consequences of accidents. Hence, PFS is entitled to summary disposition of this portion of Utah R.

CONCLUSION

For the foregoing reasons, the Board should grant PFS partial summary disposition of Utah R.

Respectfully submitted,



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Dated: June 28, 1999

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STATEMENT OF MATERIAL FACTS
ON WHICH NO GENUINE DISPUTE EXISTS

The Applicant submits, in support of its motion for partial summary disposition of Utah R, this statement of material facts as to which the Applicant contends that there is no genuine issue to be heard.

1. The State of Utah alleges in Utah R, as admitted by the Board, that PFS has not provided reasonable assurance that the public health and safety will be adequately protected in the event of an emergency at the PFSF, in that PFS has not adequately described the means and equipment for mitigation of accidents, as required by 10 C.F.R. § 72.32(a)(5), because it does not have adequate support capability to fight fires onsite. Private Fuel Storage, LBP-98-7, 47 NRC at 254. The State claims specifically that PFS "does not state whether sufficient water is available to fight a fire [at the PFSF] of any consequence and does not describe the program for maintaining any equipment."

2. PFS has analyzed the potential impact of fire on the PFSF and the spent fuel casks that would be located there and has shown that fire does not have the potential to cause a significant radioactive release, even without firefighting by personnel or the operation of any automatic fire detection/suppression system, such as a water sprinkler. Johns Dec. at ¶¶ 5-16.

3. The only fires PFS need be concerned with are: 1) a fire involving the 50 gallons of diesel fuel which the fuel tank of the cask transporter vehicle is capable of holding, either on the cask storage pads or inside a canister transfer cell in the Canister Transfer Building; 2) a fire involving the 300 gallons of diesel fuel which the fuel tanks of a heavy haul truck tractor are capable of holding, inside the cask load/unload bay in the Canister Transfer Building, 3) a fire involving the fuel from the locomotive outside

the Canister Transfer Building, and 4) wildfires. PFS did not evaluate any other fires, in that they are not credible because there will be no other sources of combustible material near the spent fuel storage casks at the PFSF. Johns Dec. at ¶ 5; see SAR at 8.2-24 to –25; Cooper Aff. at ¶¶ 10-14.

4. PFS analyzed the impacts of fires involving 50 gallons of diesel fuel from the postulated rupture of the fuel tanks of the PFSF cask transporter vehicle (which can hold a total of 50 gallons), both outside the Canister Transfer Building and inside one of the three canister transfer cells inside the Canister Transfer Building. Safety Analysis Report (SAR) at 8.2-25 to –27; Johns Dec. at ¶ 6.

5. A 50-gallon diesel fuel fire would burn for no more than five minutes and would produce a maximum temperature less than 1475 °F, without any firefighting by personnel or automatic fire suppression. Johns Dec. at ¶ 7.

6. A 50-gallon diesel fuel fire would not cause a radioactive release from a spent fuel storage cask, either outside the Canister Transfer Building or inside a canister transfer cell inside the building, because of low thermal conductivity and high specific heat of the concrete cylinders that surround the spent fuel canisters in the spent fuel storage cask systems to be used at the PFSF. Johns Dec. at ¶ 7; SAR at 8.2-26, -28; Singh Aff. at ¶¶ 3, 6; Srinivasan Dec. at ¶ 6.

7. PFS also analyzed the impact of a fire involving 300 gallons of diesel fuel from the postulated rupture of the saddle tanks of a heavy haul vehicle tractor (which can hold a total of 300 gallons) inside the cask load/unload bay in the Canister Transfer Building. SAR at 8.2-25 to –27; Johns Dec. at ¶¶ 8-10.

8. A 300-gallon diesel fuel fire would burn for no more than 10 minutes and would produce a maximum temperature less than 1300 °F, without any firefighting by personnel or automatic fire suppression. Johns Dec. at ¶¶ 10.

9. A 300-gallon diesel fire inside the cask load/unload bay would not harm any spent fuel storage casks at the PFSF, in that the spent fuel storage casks will be located either on the concrete storage pads or in a canister transfer bay, but never in the cask load/unload bay. Johns Dec. at ¶ 11; see SAR at 8.2-26 to –27; id. at 5.1-4 to –6.

10. A 300-gallon diesel fire inside the Canister Transfer Building would not threaten any other systems, structures, or components (SSCs) important to safety at the PFSF in a way that could cause a radioactive release. Johns Dec. at ¶ 10; Cooper Aff. at ¶¶ 13-14; Jacobs Aff. at ¶¶ 5-6.

11. PFS also analyzed the impact of a fire involving the diesel fuel from the postulated rupture of the fuel tanks of the locomotive outside the Canister Transfer Building. Johns Dec. at ¶¶ 12-13.

12. The diesel fuel from the locomotive could not cause a fire inside the Canister Transfer Building because PFS administrative procedures will not allow the locomotive to enter the building and the design of the building will not allow spilled diesel fuel to run into the building from the outside. Johns Dec. at ¶ 12; SAR § 8.2.5.1.

13. A fire involving the diesel fuel from the locomotive at the PFSF would be no closer than about 100 ft. from a spent fuel cask on the concrete storage pads, in that the rail line at the PFSF closest to the cask storage area is 107 ft. away, at the south side of the Restricted Area. Johns Dec. at ¶ 13; SAR Fig. 1.2-1.

14. Because of the minimum 100 ft. distance between a fire involving the diesel fuel from the locomotive and a spent fuel storage cask, the heat flux from the fire impinging on a storage cask would be much less than the heat flux that would impinge on the cask from a diesel fuel fire that engulfed the cask, such as the 50-gallon fire for which the storage casks to be used at the PFSF have been analyzed. Johns Dec. at ¶ 13.

15. Because of the much lower heat flux impinging on the spent fuel storage casks, a fire involving the diesel fuel from the locomotive at the PFSF would not cause the casks to lose their integrity and no release of radioactivity would result. Johns Dec. at ¶ 13.

16. A wildfire adjacent to the PFSF Restricted Area would also not cause a radioactive release, even without any firefighting by personnel or the operation of any automatic fire detection/suppression system. Johns Dec. at ¶ 15.

17. The PFSF Restricted Area, in which the spent fuel casks will be located at all times, will be enclosed by two fences and a perimeter road that will have a surface of crushed rock, such that a wildfire could not be sustained inside the area. Cooper Aff. at ¶ 4; Britton Aff. at ¶ 11; SAR Fig. 1.2-1.

18. The crushed rock surface extending to the edge of the perimeter road will provide a fire break composed of crushed rock of more than 150 feet to the nearest spent fuel storage cask. Cooper Aff. at ¶ 4.

19. The crushed rock surface of the Restricted Area and the surrounding perimeter road will be surrounded by a 300-foot wide barrier of fire-resistant crested wheat grass. Cooper Aff. at ¶ 5; Britton Aff. at ¶ 10.

20. The more than 150-foot crushed rock fire break, together with the surrounding 300 feet of crested wheat grass, will preclude heat damage from a wildfire to equipment structures and life forms inside the Restricted Area. Britton Aff. at ¶¶ 8-10.

21. A wildfire burning in Skull Valley would produce a peak temperature of less than 1200 °F. for a very short period and would produce temperatures over 200 °F. for no more than several minutes. Britton Aff. at ¶¶ 5, 8.

22. The spent fuel storage casks to be used at the PFSF are designed to withstand a temperature of at least 1475 °F. for significantly longer than the likely duration of a wildfire at the PFSF. Singh Aff. at ¶ 3; Srinivasan Aff. (Utah K) at ¶¶ 5-6.

23. A wildfire could not cause a spent fuel cask to exceed its design temperatures. Nor would it burn long enough for the heat to significantly degrade the safety characteristics of a spent fuel cask. Cooper Aff. at ¶¶ 8, 11; Singh Aff. at ¶¶ 3, 6; Srinivasan Aff. (Utah K) at ¶¶ 5-6.

24. A wildfire could not cause harm to any spent fuel casks or structures inside the canister transfer building because of its thick concrete walls,. Cooper Aff. at ¶¶ 7-8.

25. Because of the crested wheat grass and crushed rock barriers, a wildfire could not ignite or explode any of the diesel fuel present inside the Restricted Area. Cooper Aff. at ¶¶ 9-12.

26. In addition to fire not threatening the integrity of the spent fuel storage casks at the PFSF, no credible fire at the PFSF would threaten any other SSCs important to safety in a way that could cause a radioactive release. Johns Dec. at ¶ 14; Cooper Aff. at ¶¶ 13-14; Jacobs Aff. at ¶¶ 5-6.

27. A fire at the PFSF (or a wildfire adjacent to the PFSF Restricted Area) would not cause a radioactive release, even if no credit were taken for firefighting by personnel or for automatic fire detection/suppression systems. Johns Dec. at ¶ 16.

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CERTIFICATE OF SERVICE

I hereby certify that copies of the "Applicant's Motion for Summary Disposition of Utah Contention R – Emergency Plan" and "Statement of Material Facts," dated June 28, 1999, and supporting Declarations from Jeffrey Johns and Ram Srinivasan were served on the persons listed below (unless otherwise noted) by e-mail, with exhibits thereto by facsimile, with conforming copies by U.S. Mail, first class, postage prepaid, this 28th day of June, 1999.

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DECLARATION OF RAM SRINIVASAN

Ram Srinivasan states as follows under penalties of perjury:

1. I am Manager of Design Engineering at BNFL Fuel Solutions (formerly Sierra Nuclear Corporation). In that position I am responsible for the analysis and design of TranStor™ storage and transportation casks and related components. I am providing this affidavit in support of a motion for partial summary disposition of Contention Utah R in the above captioned proceeding to describe the ability of the TransStor™ spent fuel storage cask, to be used at the Private Fuel Storage Facility (PFSF), to withstand heat and temperatures under fire conditions.

2. My professional and educational experience is summarized in the curriculum vitae attached as Exhibit 1 to this affidavit. I have over 25 years of experience in the design of nuclear power plants. I have participated in and coordinated the design and analysis of dry cask spent fuel storage and transportation systems, including the TranStor™ and the VSC-24 designs, and I have contributed to the Safety Analysis Reports of both the TranStor™ and VSC-24.

3. I participated in, and am knowledgeable regarding, the design of the TransStor™ system spent fuel storage cask, in particular its capability to withstand heat and temperatures under fire conditions. Specifically, the TranStor™ storage casks, to be used

at the PFSF, are highly resistant to the effects of fire, as described in the Safety Analysis Report (SAR) for the TranStor™ Storage Cask at section 2.3.6 (attached as Exhibit 2).

4. The TranStor™ spent fuel storage cask system consists of a sealed, cylindrical, steel basket or canister (containing the spent fuel assemblies and pressurized helium gas) standing on end inside a ventilated, steel-lined, hollow concrete cylinder. The cask is 222.5 in. high and 136 in. in diameter. The concrete cylinder is 29 inches thick. The TranStor™ spent fuel storage cask system is depicted in the PFS SAR in Figure 4.2-4.

5. As described in section 2.3.6 of the TranStor™ storage cask SAR, the thick concrete walls of the TranStor™ storage cask protect the spent fuel from the effects of fire. While exposing the storage cask to an ambient air temperature of about 1500 °F. might cause the concrete near the surface of the cask to lose some of its strength, it would not threaten the integrity of the casks or the spent fuel inside them. It would take a continuous exposure for a period much greater than the duration of a fire that might result from a spill of 50 gallons of diesel fuel before much of the cask wall thickness would experience a temperature above its design limit, due to the low thermal conductivity and the high specific heat of the concrete. Thus, the storage cask would protect the canister and the spent fuel from the effects of any fire at that temperature for that duration.

6. The potential for a TranStor™ spent fuel storage cask to be damaged by the heat from a fire depends on the total amount of energy absorbed by the cask from the fire. I have reviewed PFSF SAR Section 8.2.5, which analyzes the effects of a fire resulting from a spill of 50 gallons of diesel fuel from the PFSF spent fuel storage cask transporter vehicle, and the declaration of Jeffrey Johns, in which he analyzes the effects of a fire resulting from diesel fuel spills. A 50-gallon diesel fuel fire encircling a TranStor™ spent fuel storage cask either inside or outside the PFSF canister transfer building would be expected to result in temperatures of less than 1475 °F. at the surface of the TranStor™ cask for no more than five minutes. SAR at 8.2-25, -27; Johns Dec. at ¶ 7. While such a fire might cause the very surface of the hollow concrete cylinder surrounding the spent fuel canister to lose a portion of its strength, the concrete would not disintegrate from an exposure to

flame temperatures of less than 1475 °F; nor would the fire threaten the integrity of the spent fuel inside the canister. Furthermore, because the duration of a 50-gallon diesel fuel fire would be so short, very little of the concrete would even suffer this effect. Therefore, such a fire would have no detrimental effect whatsoever on any other components of the TranStor™ cask system or the spent fuel contained inside and it would not cause a release of radioactivity.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on June 24, 1999.

Ram Srinivasan

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