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)	)	ASLBP No. 97-732-02-ISFSI

AFFIDAVIT OF JOHN D. PARKYN PURSUANT TO 10 C.F.R. § 2.790 REGARDING APPLICANT'S OBJECTIONS AND PROPRIETARY RESPONSES TO STATE'S SECOND AND THIRD REQUESTS FOR DISCOVERY

CITY OF LA CROSSE	)	
	)	SS:
STATE OF WISCONSIN	)	

John D. Parkyn, being duly sworn, states as follows:

I am Chairman of the Board of Private Fuel Storage L.L.C. ("PFS"), a limited liability company organized and existing under the laws of the State of Delaware with its principal office currently located in La Crosse, Wisconsin. In that capacity, I am responsible for the operational and managerial matters of PFS.

PFS is providing to the Commission copies of two PFS responses to State of Utah discovery requests, "Applicant's Objections and Proprietary Responses to State's Second Requests for Discovery (Groups II & III)" and "Applicant's Objections and Proprietary Responses to State's Third Requests for Discovery," both dated June 28, 1999, pursuant to the licensing proceeding for the Private Fuel Storage Facility ("PFSF"), an independent spent fuel storage installation, on the reservation of the Skull Valley Band of Goshute Indians. Some of the information contained

in the PFS responses is sensitive proprietary commercial and financial information that could cause great harm to PFS if it were made publicly available. Accordingly, PFS requests the NRC to withhold this sensitive information, developed and owned by PFS, from public disclosure pursuant to 10 CFR 2.790 of its regulations. This affidavit supplies the reasons why this information should be withheld from public disclosure as required by the regulation.

The PFS documents containing the sensitive, proprietary commercial and financial information for which PFS requests the Commission to treat as proprietary and to withhold from public disclosure are attached to this affidavit. Each of the documents is prominently marked with the statement "Contains Proprietary Information." These PFS documents are being provided to the Commission pursuant to the Commission's discovery regulations.

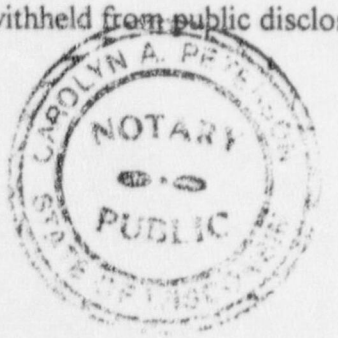
I am familiar with the sensitive commercial and financial information contained in the PFS documents attached to this affidavit. I am authorized to speak to PFS's practice of maintaining such information proprietary and the harm that would befall PFS if it were publicly disclosed.

The PFS documents attached to this affidavit contain sensitive proprietary information concerning PFS financial and business plans including evaluation of the financial viability and potential financial liability of the PFSF, financial comparison of the PFSF to potential competitors, PFS financing arrangements, PFS budgeting, PFS corporate agreements, PFS financial agreements and cost estimates and cost-related strategies for construction, operation and decommissioning of the PFSF.

The sensitive, proprietary commercial and financial information contained in the documents attached to this affidavit is information of the type customarily held in confidence by PFS, and this

information and these documents are so held. PFS does not disclose this type of information to the public and it is not available from public sources. The rational basis for not disclosing this type of information is that the information is commercially sensitive to the conduct of PFS' business, i.e., the development and operation of an independent spent fuel storage facility, and its disclosure to competitors and customers could cause PFS substantial competitive harm. If the information contained in the PFS documents attached to this affidavit became available to PFS' competitors or customers (both current and potential), those parties would learn of sensitive commercial, cost and financial information which could be used against PFS in the competition for customers or negotiation of contracts for services. Such a result would place PFS at a significant competitive disadvantage in negotiations with potential customers, would provide potential competitors with competitively advantageous information, and cause PFS substantial commercial harm.

Accordingly, the PFS documents attached to this affidavit are being transmitted to the Commission in confidence under the provisions of 10 C.F.R. § 2.790 with the understanding that they and the information they contain will be received and held in confidence by the Commission and withheld from public disclosure.



John D. Parkyn

Sworn to before me this 28 day of June 1999

Carolyn A. Peterson
Notary Public
EXPIRATION: AUGUST 18, 2002

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
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DECLARATION OF DR. GEORGE H. C. LIANG

Dr. George H. C. Liang states as follows under penalties of perjury:

1. I am currently employed by Stone & Webster Engineering Corporation as a Program Manager. In this position, I am responsible for the determination and evaluation of stormwater runoff and flood events at power facilities being designed by Stone & Webster. I am providing this declaration in support of a motion for summary disposition of Contention Utah M in the above captioned proceeding to show that Private Fuel Storage L.L.C. ("PFS") has conservatively estimated the Probable Maximum Flood ("PMF") levels for the Private Fuel Storage Facility ("PFSF") and appropriately designed structures important to safety to protect against flooding.

2. My professional and educational experience is summarized in the resume attached as Exhibit 1 to this declaration. I have extensive experience in the analysis of hydrologic processes, including over 15 years experience in the calculation and evaluation of flood events and PMFs. Through my involvement in the majority of the flooding evaluations of nuclear facilities performed by Stone & Webster during this period, I am intimately familiar with the NRC requirements and standard industry practice for calculating 100 year and PMF flood events.

3. The PMF is defined as the most severe flood that is considered possible at a site as a result of the hydrologic and meteorological conditions. Unlike calculations for the 100 year flood and other flood events, which are probabilistic determinations based on recorded rainfall data, the PMF is an estimated flood event based on theoretical conditions. Thus, the PMF represents a worst case event that is unlikely to ever occur.

4. I am knowledgeable of the location of the PFSF, the hydrologic and meteorological conditions of that area, and the area's topography. I am also knowledgeable about the facility's flood protection efforts and the design of the facility's flood diversion berms.

5. The PFSF is located in the Skull Valley in Tooele County, Utah, on the Reservation of the Skull Valley Band of Goshute Indians. The restricted area in which structures, systems and components important to safety are located consists of 99 acres with elevation ranging from 4,476 ft. on its southeastern corner to 4,462 ft. on its northeastern corner. The lowest finished elevation (top of concrete) of the northern most row of concrete storage pads – which will be the lowest structures important to safety on the PFSF – will be 4,463 ft. The potential for flooding at the site has been evaluated for two drainage basins, Basin A, to the east of the site, which covers 270 sq. mi., and Basin B, generally to the north and west of the site, which covers 64 sq. mi. Basin A stretches 29.8 miles from the access road to Lookout Mountain to the south, and is defined by Hickman Knolls to the west, the Stansbury Mountains to the east and the Cedar Mountains to the south. Basin B is defined by Hickman Knolls to the east and the Lower Cedar Mountains to the west and the south. See SAR Figure 2.4-1 attached as Exhibit 2 to this declaration.

6. Based on the visual inspection of the area's topography, PFS initially used a drainage area of 26 sq. mi. to calculate a PMF of 34,577 cubic feet per second ("cfs"), as described in its June 1997 License Application. In the bases for Contention M, as admitted by the Licensing Board, the State alleged that PFS had failed to accurately estimate the PMF in that the drainage area for Basin A of 26 sq. mi. in the License Application was incorrectly determined, and that as a result of the inaccurate estimate, structures

important to safety may be inadequately designed. The State alleged that the drainage area should have been at least 240 sq. mi. and, based on that drainage area, calculated a PMF of 57,600 cfs. The State did not raise any issue in regards to PFS's evaluation of flooding for Basin B. Therefore, the remainder of my declaration will focus on Basin A.

7. After concerns were raised by both the State and the NRC Staff, PFS reexamined the drainage area and revised its calculations for Basin A to reflect a drainage basin of 270 sq. mi. PFS's revised calculations resulted in a PMF of 53,000 cfs and a 100 year flood of 2,430 cfs. The State has explicitly accepted the 270 sq. mi. drainage area as an appropriate drainage area for calculating the potential for flooding at the PFSF and has revised its estimate of the PMF to 64,500 cfs based on the 270 sq. mi. drainage area. See State of Utah's Second Amended Responses and Supplemental Responses to Applicant's First Set of Formal Discovery Requests, Cont. M, Req. for Admn. No. 1, Inter. No. 1. Thus, the State no longer challenges the adequacy of the drainage area used by PFS for calculating flooding at the site.

8. Based on subsequent discussions with the NRC, PFS adopted very conservative assumptions for the time of concentration and the infiltration rate within Basin A. As described in the May 19, 1999 License Amendment, PFS further revised its calculations to reflect these assumptions, resulting in a design PMF of 85,000 cfs. See PFSF SAR at 2.4-12. This design PMF is extremely conservative and is more than 31% larger than the 64,500 cfs peak discharge calculated by the State.

9. The State had taken issue with the time of concentration used by PFS in its calculation of the PMF. The time of concentration is the total time it takes rainfall to reach the outlet from the farthest point in the basin. The smaller the time of concentration, the greater the flood event. Another influential variable that can greatly affect the size of the flood is the infiltration rate used in calculating the PMF. The infiltration rate determines how much rainfall is absorbed by the ground instead of contributing to the storm flow. Infiltration is accounted for by either assuming a constant infiltration rate or using the Soil Conservation Service's (now the National Resources Conservation Serv-

ice) curve number (CN) method. The higher the CN, the less absorption of water by the ground and the greater the PMF.

10. The State in its PMF calculation used a smaller time of concentration than PFS did, which would increase the PMF event. However, for calculating its 85,000 cfs design PMF, PFS used a CN of 96 for calculating infiltration. A CN of 96 results in very little absorption of water by the ground and is much more conservative in this respect than the infiltration rate of .15 used by the State in its PMF calculation. It therefore greatly increases PFS's calculated PMF compared to that of the State's. The much more conservative assumption by PFS on the lack of infiltration more than offsets the State's more conservative time-of-concentration, thus resulting in PFS's PMF design basis of 85,000 cfs being more than 31% larger than the peak PMF discharge of 64,500 cfs calculated by the State.

11. Using the design PMF of 85,000 cfs, PFS calculated the elevation of the flood waters based on the basin's natural topography. As shown in Exhibit 3 attached to this declaration, the level of the flood waters in Basin A, which is east of the site, range from 4,468.8 ft (6.2 ft below the site's elevation) at the facility's southeastern corner to 4,456.7 ft (5.3 ft below the site's elevation) at the northeastern corner. Nowhere would the flood waters impinge on the PFSF site. Corresponding to the State's lower PMF estimate of 64,500 cfs, the State's estimate of flood levels would be approximately 0.5 ft. below PFS's estimate. Likewise, therefore, the PMF as calculated by the State would not result in the flooding of any portion of the PFSF site.

12. PFS then calculated the effect of the access road on the water elevation which will traverse part of Basin A up-gradient of the PFSF site. See Exhibits 2 and 3. In accordance with standard engineering practice, the access road will only be designed to pass the 100 year flood, not the PMF. Therefore, for the 85,000 cfs design basis PMF, water will accumulate behind the road to a peak elevation of 4,506.4 ft., resulting in water overtopping of the access road by 4.45 ft. After the waters overtop the access road, they will return to their natural flow pattern, as described in the preceding paragraph. Because the floodwaters will not reach the facility, the PFSF will remain flood-dry.

13. A diversion berm will be built to the east of the PFSF to prevent the flooding of the facility by the water that accumulates behind the access road, and to prevent water from crossing between the two basins. This berm will have a north-south alignment and will span 1,928 ft., extending from Hickman Knolls to several hundred feet past the access road. See SAR Figure 2.4-4, attached as Exhibit 4 to this declaration. From Hickman Knolls to the access road, the berm's elevation will be 4,507.5 ft, which be at least one foot higher than the peak elevation of 4,506.4 ft of the water accumulated behind the access road for the 85,000 cfs PMF.

14. In the State's Amended Response to the Applicant's Second Discovery Request, dated May 12, 1999, the State questions how the access road will cross the diversion berm and whether that crossing will allow flood waters to reach the PFSF. The design of this intersection is such that no path is available for flood waters to reach the facility. As shown on SAR Figure 2.4-4 (Exhibit 4), the access road will slope upwards to an elevation of 4,507.5 ft. as it approaches the diversion berm and will slope downward after it passes over the berm. Thus, the elevation of the diversion berm will continue to be at least one foot above the level of the floodwaters.

15. In summary, the PMF calculated by PFS is extremely conservative and greatly exceeds the flood flows calculated by the State. Because the PFSF is designed to address this conservatively estimated PMF, there will be no impact to public health or safety.

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

Executed on June 28 1999

George H. C. Liang

Dr. George H. C. Liang

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)	)	

DECLARATION OF JERRY COOPER

CITY OF ENGLEWOOD	)	
	)	SS:
STATE OF COLORADO	)	

I, Jerry Cooper, being duly sworn, state as follows:

1. I am the Project Engineer with Stone & Webster Engineering Corporation (Stone & Webster) for the Private Fuel Storage Facility (PFSF). Stone & Webster is the architect-engineer for the PFSF. As Project Engineer for the PFSF, I am responsible for directing the multidiscipline engineering and design activities of the PFSF project. I am providing this affidavit in support of a motion for partial summary disposition of Contention Utah M in the above captioned proceeding to describe the impact of the Probable Maximum Flood on the operations and structures of the PFSF.

2. I have participated in and am knowledgeable of the design and layout of the PFSF. My professional and educational experience is summarized in the curriculum vitae attached as Exhibit 1 to this affidavit. I have 28 years of experience in the engineering, design, construction, operation, and maintenance of naval nuclear power plants,

commercial nuclear plants, spent fuel storage facilities, and environmental remediation projects.

3. In Utah M and its responses to PFS's discovery requests, the State claims that the Applicant's inaccurate estimate of the PMF could result in potential damage to structures important to safety. The State supports this contention by claiming that the access road may flood or wash out. Any hazard that the PMF might pose to the access road is of no consequence, in that the access road is not a structure, system or component important to safety. As Section 3.4 and Table 3.4-1 of the PFS SAR show, the fuel casks, the fuel canisters, the storage pads, and the canister transfer building (including components inside the building) are the only "structures, systems, and components important to safety" (defined by 10 C.F.R. § 72.3) at the PFSF. The NRC defines as such those systems that 1) maintain the conditions required to store spent fuel safely, 2) prevent damage to the spent fuel container during handling and storage, and 3) provide reasonable assurance that the spent fuel can be handled or stored without undue risk to the public. The access road meets none of these criteria. The access road is not relied upon in any manner to maintain conditions necessary to store spent fuel safely; it is not relied upon in any manner to prevent damage to the spent fuel container during handling and storage; and it is not relied upon in any manner to provide reasonable assurance that the spent fuel can be handled or stored without undue risk to the public. Thus, the access road is not a structure, system or component important to safety.

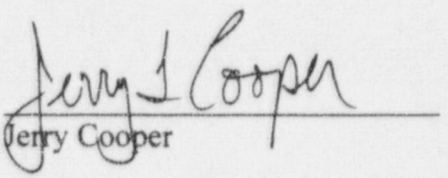
4. The State claims that the flooding or washing out of the access road would prevent necessary PFS personnel or emergency service providers from reaching the site which would result in PFS not being able to cope with emergencies. The flooding or washing out of the access road would, however, have no adverse impact on public health and safety. Such loss of the access road would pose no threat to the integrity of the storage casks, and could not result in the release of radioactive material, in that the flood waters from the design basis PMF would not impinge on the site itself. Therefore, there would be no release of radioactivity that would require emergency action. Further, ap-

propriate security and operations staff would be maintained at the site throughout the design basis PMF event to ensure the safe operation of the facility at all times. After the design basis PMF event, the facility would be accessible to foot traffic and four wheel drive vehicles, and, until the access road were repaired, facility operations would be minimized.

5. The access road is not built to withstand the effects of a PMF event because the road is not a structure important to safety for the reasons described above. The access road is designed to withstand the effects of the 100 year flood, not the PMF, which exceeds standard engineering practice. Interstate highways, are typically designed to withstand a 50 or 100 year flood, not a PMF. In addition, the Utah Department of Transportation requires that bridges built within the State be designed for the 50 or 100 year floods. Likewise, limitations on other building structures, even ones considered important for public health or safety (such as hospitals or prisons) are typically based on the 100-year flood and not the PMF. Because the PMF is an extraordinary event that is extremely unlikely to occur, the NRC does not require that structures which are not important to safety be built to withstand its effects.

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

Executed on June 28, 1999



Jerry Cooper

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

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PRIVATE FUEL STORAGE L.L.C.	)	Docket No. 72-22
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(Private Fuel Storage Facility)	)	

DECLARATION OF JEFFREY JOHNS

Jeffrey Johns states as follows under penalties of perjury:

1. I am a Licensing Engineer for Stone & Webster Engineering Corp. I am providing this declaration in support of a motion for partial summary disposition of Contention Utah R in the above captioned proceeding to show that a fire – even assuming no fire fighting by site personnel or fire suppression by any of the installed automatic fire suppression systems – would not cause a release of radioactivity at the Private Fuel Storage Facility (PFSF).

2. My professional and educational experience is summarized in the curriculum vitae attached as Exhibit 1 to this declaration. I have 21 years of experience in the nuclear power industry and nine years of experience with the licensing of independent spent fuel storage installations (ISFSIs). I have experience in performing accident analyses for nuclear power plants and ISFSIs and in preparing ISFSI emergency plans. For the PFS project I am responsible for the preparation of the PFSF Safety Analysis Report, including accident analysis and radiation protection for the spent fuel cask systems to be used at the PFSF. As part of my responsibilities, I have performed assessments of the effects of possible fires at the PFSF.

3. I am knowledgeable of the design and operation of the PFSF and the spent fuel casks that will be used there. I am knowledgeable of the means of estimating the duration of and maximum temperatures produced by diesel fuel fires. I am familiar with the affidavit of Jerry Cooper regarding the resistance of the PFSF to wildfires. I am also familiar with the affidavit of Krishna Singh and the declaration of Ram Srinivasan regarding the resistance to fires of the spent fuel cask systems that will be used at the PFSF.

4. The State of Utah has alleged in Contention Utah R 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 does not have adequate support capability to fight fires onsite. The State's claim is immaterial, however, in that the PFSF is designed to withstand the effects of credible fires without any firefighting by personnel or the operation of any automatic fire detection/suppression system such as a water sprinkler.

5. The only significant sources of combustible material near the spent fuel casks at the PFSF will be the diesel fuel tanks of the PFSF cask transporter vehicle (which will move storage casks from the Canister Transfer Building to the concrete storage pads) and the locomotive and the heavy haul truck tractors (which will bring spent fuel transportation casks from offsite to the Canister Transfer Building). PFS will have two diesel fuel storage tanks at the PFSF, but they will be too far away to pose a hazard to either the spent fuel storage casks on the storage pads or inside the Canister Transfer Building. Cooper Aff. at ¶¶ 9, 12. There will be no other significant sources of combustible material in the Restricted Area in which the spent fuel casks and the Canister Transfer Building are located at the PFSF. Safety Analysis Report (SAR) at 8.2-24 to -25. As described in the affidavit of Jerry Cooper the surface of the Restricted Area is covered with crushed rock 12 inches deep and the Canister Transfer and Security and Health Physics Buildings are of concrete construction. Cooper Aff. at ¶ 3-4, 7.

6. PFS analyzed the potential impact of fire on the PFSF and the spent fuel storage casks that would be located there in Section 8.2.5 of the PFS Safety Analysis Re-

port (SAR). SAR Section 8.2.5.2 considers fires involving 50 gallons of diesel fuel from a postulated rupture of the fuel tanks of the cask transporter vehicle (which contain a total of 50 gallons), and 300 gallons from a postulated rupture of the saddle tanks of a heavy haul vehicle tractor (which contain a total of 300 gallons). PFS evaluated the effects of cask transporter (i.e., 50-gallon) fires both outside the Canister Transfer Building and inside a canister transfer cell inside the Canister Transfer Building. SAR at 8.2-25 to –28. It evaluated the effects of a heavy haul truck (i.e., 300-gallon) fire inside the cask load/unload bay in the Canister Transfer Building. SAR at 8.2-25 to –27.

7. A 50-gallon diesel fuel spill (from the cask transporter) would not cause a radioactive release from a spent fuel storage cask by assuming that the 50 gallons encircles a spent fuel storage cask, ignites, and burns until all of the fuel is expended, with no credit taken for fire fighting of any kind. As stated in the PFSF SAR:

> This scenario is analyzed in Section 11.2.4 of the HI-STORM SAR. From IAEA requirements (Reference 18), the "pool" of fuel is assumed to completely encircle a storage cask and extend 1 meter beyond the cask surface. Based on the minimum outer cask diameter of 132.5 inches (HI-STORM), this spill would result in a ring of fuel with a pool surface of about 21,260 sq in around the storage cask.

SAR at 8.2-25. Fifty gallons spread across this area would pool to a depth of 0.54 inch. PFSF SAR Section 8.2.5.2 states that:

> A fuel consumption rate of 0.15 in/min was assumed (Reference 19) based on gasoline/tractor kerosene experimental burning rates.

SAR at 8.2-25. As stated in the PFSF SAR, the 50 gallons of fuel would sustain a fire for about 3.6 minutes. Id. The maximum temperature produced by the fire would be less than 1475 °F. The temperature and duration of the fire are such that it 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. SAR at 8.2-26, -28; Singh Aff. at ¶ 3; Srinivasan Aff. at ¶ 6.

8. On the other hand, the SAR's evaluation of a fire resulting from a postulated spill and ignition of 300 gallons of diesel fuel from the saddle tanks of a heavy haul vehicle tractor in the Canister Transfer Building cask load/unload bay did not estimate the burn time of this volume of diesel fuel. Rather, the evaluation relied on operation of the automatic fire detection and suppression systems to extinguish the postulated fire in less than 15 minutes. SAR § 8.2.5.2. Nevertheless, if no credit is taken for the automatic fire detection/suppression systems in the cask load/unload bay, the fire duration can be estimated by applying the same method that was used for the 50-gallon fire analysis (i.e., by assuming that the fuel pools on the floor of the cask load/unload bay and burns until it is consumed), and the resulting temperature can be evaluated based on information in the Fire Protection Handbook (Reference 1). Such an analysis of the 300-gallon fire shows that it would burn out in less than 10 minutes and would not threaten any systems, structures, or components (SSCs) important to safety even without the operation of automatic fire detection and suppression systems.

9. The cask load/unload bay is approximately 198 ft. long and 48 ft. wide. SAR Fig. 4.1-1. Diesel fuel spilled into this bay would tend to spread forming a relatively thin layer. In calculating a fuel burn time, it is conservative to assume that the diesel fuel forms a relatively deep pool, in that a deep pool burns longer than a shallow pool, and a 1 inch depth is considered to be a very conservative assumption. A 300-gallon volume of liquid at a depth of 1 inch would occupy an area of 481 sq. ft., represented by a circle with a 12.4 ft. radius. This surface area is only 5% of the total area of the cask load/unload bay, so the walls of the bay would not confine the spilled fuel within a smaller and deeper pool. Any drain sumps in the cask load/unload bay that could potentially collect diesel fuel from postulated rupture of the heavy haul tractor fuel tanks will be located so as to assure that burning of diesel fuel in these sumps will not threaten SSCs important to safety.

10. Assuming that this pool of 300 gallons of diesel fuel is ignited and burns, the duration of combustion can be calculated using the 0.15 inch/minute fuel consump-

tion rate specified in Section 8.2.5.2 of the PFSF SAR (Reference 2). A 1 inch deep pool of diesel fuel will be consumed in 1 in. / 0.15 in./min. = 6.67 minutes. Figure 7-9B of Reference 1 provides time-temperature curves for different types of fires from slight to moderate to severe. Temperature curve E of this figure is for the "standard exposure fire - severe", and includes fires fueled by flammable liquids. This standard fire time-temperature curve, which is also shown in Figure 7-9A of Reference 1, reaches a temperature of 1,000 °F at 5 minutes and a temperature of 1300 °F for a 10 minute burn duration. For the calculated 6.67 minute burn duration, a peak temperature of approximately 1200 °F would be reached. This fire would not threaten any SSCs important to safety at the PFSF in a way that could cause a radioactive release. The overhead crane is located approximately 70 ft above the floor of the Canister Transfer Building, and the semi-gantry crane is located approximately 55 ft above the floor of the Canister Transfer Building. SAR Fig. 4.7-1 (sheet 2). The only credible significant impact a fire might have is that it could cause a loss of electrical power to SSCs inside the Canister Transfer Building. SAR section 8.1.1.3 shows, however, that a loss of power would not cause an accident that would result in a release of radioactivity, even if it occurred while canister transfer operations were in progress.

11. It is not credible that the postulated 300-gallon diesel fuel fire discussed above would affect spent fuel storage casks or transfer casks containing loaded spent fuel canisters, since the spent fuel storage casks at the PFSF will be located either on the concrete storage pads or in a canister transfer cell, but not in the cask load/unload bay, and a loaded transfer cask would only be located in a canister transfer cell. The cask load/unload bay is physically separated from the transfer cells by a concrete wall, and will be constructed so that any spilled diesel fuel would remain in the bay and would not enter a transfer cell. See SAR at 8.2-26 to –27; id. at 5.1-4 to –6; id. Figs. 1.2-1, 4.7-1 (sheet 1).

12. Potential fires involving diesel fuel from the locomotive also would not cause a radioactive release at the PFSF. PFSF SAR section 8.2.5.1 states:

> For rail delivery/retrieval of shipping casks, the train locomotives are required by administrative procedure to stay out of the Canister Transfer Building. The design of the building and its surroundings will assure that any diesel fuel spilled outside the building will not flow into the building, which could create a fire hazard.

Thus, fuel from the locomotive could not cause a fire inside the Canister Transfer Building.

13. A locomotive fuel spill and associated fire at the PFSF is extremely unlikely given the low speeds at which the locomotives will operate at the PFSF and the difficulty of igniting spilled diesel fuel. Nevertheless, it could be postulated that the fuel tank(s) of a locomotive staged at the PFSF ruptures and diesel fuel spills onto the ground and ignites outside the Canister Transfer Building. The PFSF railroad line nearest the spent fuel storage pads is 107 ft from the closest pads, at the south end of the PFSF Restricted Area. SAR Fig. 1.2-1. Thus, a fire associated with a locomotive would be approximately 100 ft from the nearest spent fuel storage casks. As a result of the distance, the heat flux impinging on the storage casks (Section 21, Chapter 6 of Reference 1) and the effects of such a fire on the storage casks at the PFSF would be much less than those resulting from the postulated fire in which 50 gallons of diesel fuel is assumed to encircle a storage cask and burn, which is described above. Therefore, the storage casks would retain their integrity and there would be no release of radioactivity from storage casks, even in the highly unlikely event of a diesel fuel fire associated with a locomotive.

14. In addition to fire not threatening the integrity of the spent fuel 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. The only credible significant impact a fire might have is that it could cause a loss of electrical power to SSCs inside the Canister Transfer Building. As indicated above, however, SAR section 8.1.1.3 shows that a loss of power would not cause an accident that would result in a release of radioactivity, even if it occurred while canister transfer operations were in progress.

15. In addition to a fire inside the FFSF Restricted Area not posing a threat to cause a radioactive release, a wildfire adjacent to the PFSF Restricted Area would also not cause a radioactive release. Because of the distance that would separate a wildfire from the Canister Transfer Building and the spent fuel storage casks at the PFSF, a wildfire would pose no direct threat to the spent fuel casks or the SSCs important to safety in the Canister Transfer Building, even without firefighting by personnel or the operation of any automatic fire suppression systems. Cooper Aff. at ¶ 8. Furthermore, a wildfire could not cause a fire or explosion on site that would threaten the spent fuel casks or the SSCs important to safety. Id. at ¶¶ 10-14.

16. In conclusion, 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.

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

Executed on June 28, 1999.

Jeffrey R Johns

Jeffrey Johns

References

1. Fire Protection Handbook, Sixteenth Edition, National Fire Protection Association, 1986.

2. Gregory, J.J., et. al., Thermal Measurements in a Series of Large Pool Fires, SAND 85-1096, Sandia National Laboratories, August, 1987.