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License Number NPF-3

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United States Nuclear Regulatory Commission
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Subject: Response to Request for Additional Information Regarding License Amendment Application to Allow Use of Expanded Spent Fuel Storage Capability (License Amendment Request No. 98-0007; TAC No. MA5477)

Ladies and Gentlemen:

On May 21, 1999, the FirstEnergy Nuclear Operating Company (FENOC) submitted an application for an amendment to the Davis-Besse Nuclear Power Station (DBNPS), Unit Number 1, Operating License Number NPF-3, Appendix A Technical Specifications, regarding the use of expanded spent fuel storage capability. The proposed amendment (DBNPS Serial Number 2550) would expand the present spent fuel storage capability by up to 289 storage locations by allowing the use of spent fuel racks in the cask pit area adjacent to the spent fuel pool (SFP). On November 2, 1999, FENOC received from the NRC (DBNPS Log Number 5570) a request for additional information regarding the license amendment application. Enclosure 1 provides the response to this request for additional information. In addition, in a November 23, 1999 conference call, the NRC staff requested additional information regarding general precautions for diving operations in the cask pit. Enclosure 2 provides the response to this request.

Should you have any questions or require additional information, please contact Mr. James L. Freels, Manager - Regulatory Affairs, at (419) 321-8466.

Very truly yours,

Guy G Campbell

MKL/laj

Enclosures

A001

cc: J. E. Dyer, Regional Administrator, NRC Region III
D. V. Pickett, NRC/NRR Project Manager
J. R. Williams, Executive Director, Ohio Emergency Management Agency, State of Ohio (NRC Liaison)
K. S. Zellers, NRC Region III, DB-1 Senior Resident Inspector
Utility Radiological Safety Board

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

REGARDING

LICENSE AMENDMENT REQUEST (LAR) 98-0007

FOR

DAVIS-BESSE NUCLEAR POWER STATION UNIT NUMBER 1

NRC Request for Information:

1. With regard to the thermal hydraulic analyses for the spent fuel pool (SFP), provide the decay heat loads from the partial (planned) core discharge and the full (unplanned) core discharge (information should clearly show the decay heat generated from each batch of the previously discharged spent fuel assemblies (SFAs) and from the freshly discharged partial core and full core in the SFP).

DBNPS Response:

Tables 1 through 3 attached to this response provide the requested decay heat load data for the core discharge scenarios described in the May 21, 1999 license amendment application (DBNPS Serial Number 2550). Table 1 provides decay heat loads for the partial core discharge scenarios (scenarios 1 and 2). Table 2 provides decay heat loads for "Type A" full core discharge scenarios (scenarios 3A and 4A). Table 3 provides decay heat loads for "Type B" full core discharge scenarios (scenarios 3B and 4B). The discharge scenarios analyzed in the thermal-hydraulics evaluation are described on pages 10 and 11 of the Safety Assessment and Significant Hazards Consideration (SASHC), which is an attachment to the license amendment application.

NRC Request for Information:

2. With regard to the thermal hydraulic analyses for the cask pit, on page 5-15 of the Holtec report, Holtec stated that the entire fuel storage rack in the cask pit region is modeled as containing SFAs from previous discharges. Also, in Enclosure 2 (Commitment List) of the May 21, 1999 submittal, FirstEnergy stated that only relatively old SFAs, each with a maximum heat generation rate of 873 Watts, were assumed to be stored in the cask pit. The duration which is required for these old/previously discharged SFAs to be placed in the SFP prior to being transferred to the cask pit is at least three years. FirstEnergy further stated that administrative controls will be established to ensure this three year age limitation for SFAs prior to being transferred to the cask pit. However, the proposed Technical Specifications (TS) Sections 3.9.13 and 4.9.13.1, which require the SFAs to be placed in the cask pit in accordance with the criteria shown in TS Figure 3.9-2, "Burnup vs. Enrichment Curve for Davis-Besse Cask Pit Storage Racks," will allow the entire freshly discharged core to be placed in the cask pit. Please clarify these apparent discrepancies.

DBNPS Response:

There are three applicable restrictions which each spent fuel assembly must meet in order to be stored in the cask pit racks:

- For criticality considerations, the spent fuel assembly must meet a minimum burnup restriction, which is a function of initial enrichment as specified in proposed Technical Specification (TS) Figure 3.9-2, "Burnup vs. Enrichment Curve for Davis-Besse Cask Pit Storage Racks," before the spent fuel assembly will be allowed to be stored in the cask pit storage racks. A summary of the criticality safety evaluation is provided on pages 9 and 10 of the SASHC. Proposed TS Figure 3.9-2 is provided on page 33 of the SASHC.

- For thermal-hydraulic considerations, the spent fuel assembly must not exceed a maximum heat generation rate restriction of 873 Watts. A summary of the thermal-hydraulics evaluation is provided on pages 10 through 12 of the SASHC. As stated on page 12 of the SASHC, administrative controls will be established to ensure that this limitation is not exceeded, and this limitation will be included in the DBNPS Updated Safety Analysis Report (USAR) Technical Requirements Manual (TRM). A spent fuel assembly will not be allowed to be stored in the cask pit storage racks if this maximum heat generation rate is exceeded.

- For radiological considerations, the spent fuel assembly must meet a restriction of 3 years minimum decay time since last irradiation. A summary of the radiological evaluation is provided on pages 16 and 17 of the SASHC. As stated on page 17 of the SASHC, administrative controls will be established to ensure that this limitation is not exceeded, and this limitation will also be included in the DBNPS USAR TRM. A spent fuel assembly will not be allowed to be stored in the cask pit storage racks if this irradiation restriction is not met.

Therefore, together these three restrictions will prevent fuel assemblies from a freshly discharged core from being placed in the cask pit spent fuel racks.

NRC Request for Information:

3. Discuss the procedures or programs established to monitor and control the SFP and cask pit water temperatures during planned refueling outages and unplanned full core offload events. Information should include:

   a. Discuss how often the water temperatures in the SFP and the cask pit will be monitored.

   b. Provide the setpoints of the high water temperature alarms for the SFP and the cask pit.

   c. Discuss the precautious actions (i.e. prohibit fuel handing, aligning other systems to provide SFP cooling, etc.) to be taken in the event of a high SFP or cask pit water temperature alarm.

DBNPS Response:

A SFP water temperature indicator is provided in the control room. The indicator reading is logged by the control room operator once per 8 hours. A log maximum of 120 °F is provided to alert the operator that additional attention is warranted should the SFP water temperature reach that range. Spent fuel pool temperature indication is also available via the plant computer.

A SFP high temperature annunciator alarm is provided in the control room, with a setpoint of 125 °F. Upon receipt of the alarm, alarm procedure DB-OP-02003, "ECCS Alarm Panel 3 Annunciators," directs the operator to: check for SFP high temperature by observing the control room SFP temperature indicator or computer point; check that the SFP heat exchanger outlet temperatures are less than 100 °F; verify adequate component cooling water (CCW) flow rate to each SFP heat exchanger if SFP heat exchanger outlet temperature is greater than 100 °F; take appropriate actions if CCW flow rate is not adequate; and raise cooling capacity by starting a second SFP pump if only one SFP pump is running. If the SFP cooling system has been lost or is insufficient to maintain SFP water temperature below 125 °F, the alarm procedure directs the operator to utilize the Decay Heat Removal (DHR) system.

If a DHR train being utilized for SFP cooling is lost, and no DHR train can be aligned to provide SFP cooling, abnormal procedure DB-OP-02527, "Loss of Decay Heat Removal," instructs the operator to place both trains of SFP cooling in service. In the event the SFP temperature reaches 125 °F, the procedure further directs the operator to evacuate the SFP area and place the Emergency Ventilation System in service on the SFP area. With the SFP area evacuated, fuel handling in the SFP area could not occur.

It is important to note that although the thermal-hydraulic analysis indicates that the SFP bulk temperature will exceed 125 °F, as further discussed in the responses to Questions 4 and 6, this analysis is very conservative for the purpose of this license amendment application, which is to allow the use of the cask pit racks. The thermal-hydraulic analysis assumes a completely re-racked and filled SFP (1714 assemblies), whereas in actuality, since the cask pit racks are to be relocated to the SFP as part of the future re-rack project, fuel assemblies will not be stored in the cask pit when the SFP is expanded beyond its current capacity of 735 storage locations. Therefore, for the condition of interest for this license amendment application, i.e., during the time that fuel assemblies would be stored in the cask pit, it is unlikely that the SFP bulk temperature would reach 125 °F.

As shown by Figure 3.5.1 of the Holtec International Design and Licensing Report, which was included as an attachment to the May 21, 1999 license amendment application, the SFP and cask pit areas are connected by an opening in a common wall. As noted on page 12 of the SASHC and Section 5.8.3 of the Holtec Report, the thermal-hydraulics analysis confirmed the adequacy of cooling the cask pit via passive, buoyancy-driven, natural convection water exchange between the cask pit and the SFP. The evaluation determined that the temperature of the water in the cask pit will be approximately 4 °F above the peak bulk SFP temperature for scenario 4A, which is the worst case full core discharge scenario. Since this temperature difference between water in the cask pit and water in the SFP is small, it was determined that separate temperature instrumentation for the cask pit was not required.

NRC Request for Information:

4. The calculated minimum time from the loss-of-pool cooling at peak SFP temperature until the pool boils based on the decay heat load for the full core off-load is 3.78 hours with a maximum boil-off rate of 69.57 gpm. Discuss how this duration will be sufficient for the operators to intervene.

DBNPS Response:

A summary of the evaluation of the effects of a complete failure of the forced SFP cooling systems is provided on pages 11 and 12 of the SASHC. As noted in the summary, assuming that SFP cooling cannot be restored, a 70 gpm (approximate) boil-off rate could occur for the most limiting full core discharge scenario (scenario 4A). Since the analysis was performed to envelope a future planned SFP re-rack, and thus assumed a completely re-racked and filled SFP, the analysis is conservative for this license amendment application.

In the unlikely event that a boil-off situation were to occur, in order to maintain SFP water level, make-up water can be provided via a variety of already-proceduralized valve line-ups, including gravity fill methods, using the borated water storage tank, the demineralized water storage tank, or the clean waste receiver tanks as water sources.

In the unlikely event that the establishment of makeup to the SFP was delayed following a boil-off event, approximately 25 hours would be required to reduce SFP level from the TS minimum level of 23 feet above the top of fuel assemblies seated in the storage racks, to the level corresponding to 9-1/2 feet above the top of fuel stored in the racks, given a SFP plan area of approximately 1057 ft^2, and assuming a constant boil-off rate of 70 gpm. A minimum of 9-1/2 feet of borated water above the top of active fuel stored in the racks is required to ensure adequate biological shielding.

In summary, 25 hours provides operators with more than sufficient time to intervene with available means to maintain or restore the SFP water level.

NRC Request for Information:

5. The SFP cooling portion of the spent fuel pool cooling and cleanup system (SFPCC), which is designed to maintain the SFP at or below 125°F with a decay heat load of 12.4×10^6 Btu/hr from all the previously discharged SFAs and a freshly discharged partial (1/3) core, consists of two-half capacity cooling trains. Each cooling train is primarily equipped with one pump, one heat exchanger, and its associated valves, piping, instrumentation and controls. The decay heat removal (RHR) system which consists of two 100 percent capacity trains serves as a back-up system to the SFPCC system. Decay heat is removed from the SFP heat exchanger by the component cooling water system. Provide the following information:

   a. Prior to planned (partial) or unplanned full core offload, how many trains of SFPCC system and RHR system are required to be operable and available for SFP cooling?

   b. Discuss the provisions that have been established in the plant operating procedures to ensure that the RHR system will be aligned for SFP cooling.

DBNPS Response:

The DBNPS operating requirements with respect to core offloads are based on the shutdown risk program described in procedure NG-DB-00116, "Outage Nuclear Safety Control." With the core not fully offloaded, one SFP cooling train is required to be functional if a Decay Heat Removal (DHR) train is available for SFP cooling. Both SFP cooling trains are required to be functional if neither DHR train is available for SFP cooling. With the core fully offloaded, both SFP cooling trains are required to be functional and one DHR train is required to be functional for SFP cooling. The DHR train may be temporarily removed from functional status to support other outage evolutions, provided specific provisions are enacted to ensure that the DHR train remains readily available to support SFP cooling.

As stated in response to Question 3, if the SFP cooling system has been lost or is insufficient to maintain SFP water temperature below 125 °F, the SFP high temperature annunciator alarm procedure directs the operator to utilize the DHR System.

NRC Request for Information:

6. On page 5-2 of the Holtec report, Holtec stated that to account for the future re-racking of the SFP, the bulk temperature analysis was performed using a conservative storage capacity of approximately 1,650 SFAs stored in the SFP. On page 5-13, Holtec stated that the decay heat generation rate in the cask pit racks is calculated based on the maximum heat generation rate from 1,609 SFAs. Also, in Table 5.6.1, Holtec indicated that the maximum number of SFAs assumed for SFP and cask pit analyses were 1,714 SFAs and 289 SFAs, respectively. Please clarify these apparent discrepancies.

DBNPS Response:

As discussed (Item i) in Section 5.1 of the Holtec Report, the thermal-hydraulic analyses were performed in a manner intended to bound a future re-racked spent fuel pool with 1650 anticipated storage locations (this re-racking requires that a future license amendment application be submitted by FENOC). The future re-racked pool capacity of 1650 fuel assembly storage locations is based on a projection of the maximum achievable pool storage density, assuming no storage racks in the cask pit, since, as stated on page 2 of the SASHC, the four cask pit storage racks are planned to be relocated into the SFP as part of the final completion of this future re-racking project. This condition (1650 fuel assembly storage locations) bounds the current configuration of the existing 735 SFP storage locations, augmented by 289 additional locations in the cask pit, for a total of 1024 total storage locations, as also explained in Section 5.1 of the Holtec Report. However, as discussed below, the actual thermal-hydraulic analysis performed was even more conservative since it was based on a number of fuel assemblies greater than the 1650 storage locations.

As stated in Section 5.3 of the Holtec Report and pages 10 and 11 of the SASHC, for maximum SFP heat loading the partial core discharge scenarios (scenarios 1 and 2) were analyzed assuming a final discharge of 72 assemblies into a spent fuel pool already containing 1609 assemblies previously discharged from the core, for a total of 1681 stored fuel assemblies. Table 1 shows the projected discharge schedule which would yield this cumulative number of stored fuel assemblies. This analyzed spent fuel inventory exceeds the maximum physical inventory, but was used to provide a clearly conservative thermal loading. Thus, the results from the analyzed partial core discharge scenarios of 1681 stored assemblies bound the maximum achievable condition of 1650 stored assemblies.

As stated in Section 5.3 of the Holtec Report and page 11 of the SASHC, there were two types of full-core discharge scenarios evaluated. The two discharge scenario types differ only in the time between the final discharge and the previously discharged batch. Both the "Type A" discharge scenarios (scenarios 3A and 4A) and the "Type B" discharge scenarios (scenarios 3B and 4B) were evaluated assuming a final discharge of 177 assemblies into a spent fuel pool already containing 1537 assemblies previously discharged from the core, for a total of 1714 stored fuel assemblies. Tables 2 and 3 show the projected discharge schedule which would yield this cumulative number of stored fuel assemblies. Again, this analyzed inventory exceeds the maximum physical inventory, but was used to provide a clearly conservative thermal loading. Thus, the results from the analyzed full core discharge scenarios of 1714 stored assemblies bound the maximum achievable condition of 1650 stored assemblies for a future re-racked SFP.

As described in Section 5.6 of the Holtec Report, the thermal-hydraulic evaluation for the cask pit assumes that the fuel assemblies stored in the cask pit racks have a maximum heat generation rate corresponding to the average of 1609 previously discharged fuel assemblies in the spent fuel pool, calculated to be 873 Watts (1,404,009 Watts/1609 assemblies). Since the thermal-hydraulic evaluation for the cask pit was based on this assumed maximum heat generation rate, administrative controls will be established to ensure that this limitation is not exceeded (see response to Question 2).

The maximum local water and fuel rod cladding temperature increases over the SFP bulk temperature were determined as described in Sections 5.6 and 5.7 of the Holtec Report. Table 5.6.1, "Data for SFP/Cask Pit *Local* Temperature Evaluation," specifies the number of fuel assemblies assumed for the *local* temperature analyses of the SFP and the cask pit as 1714 and 289 fuel assemblies, respectively. The SFP evaluation assumed decay heat from all 1714 assemblies in the full core discharge scenarios, thereby ensuring bounding decay heat loads and bounding local water and fuel cladding temperatures. The determination of the maximum bulk temperature of the cask pit utilized a separate model assuming 289 assemblies in the cask pit racks. The initial coolant temperature for this model was based on 1714 assemblies in the SFP. Section 5.8.3 describes the determination of maximum local water and fuel cladding temperatures for the fuel in the cask pit based on the temperature increases calculated for the SFP.

NRC Request for Information:

7. Please revise Table 5.8.1 of Holtec report to:

   a. Add a column to indicate the reactor shutdown time required prior to core discharge for each scenario.

   b. Add a row for cask pit to indicate the reactor shutdown time required prior to core discharge, and the maximum bulk temperature and its coincident decay heat load and coincident time after reactor shutdown.

   c. The note for scenarios 3A and 4A indicates that the coincident times for the corresponding bulk temperatures are measured from the second reactor shutdown. Please clarify what the second reactor shutdown is.

DBNPS Response:

The in-core hold time was not listed in Table 5.8.1, "Results of Bulk Temperature Transient," because it is an input value, not a calculated result. The minimum in-core hold time is specified in Table 5.4.1, "Data for SFP Bulk Temperature Evaluation," as 150 hours.

As described in the response to Question 2, freshly discharged fuel can not be stored in the cask pit racks. Only fuel assemblies which meet the minimum burnup restriction, do not exceed the maximum heat generation rate restriction (873 Watts), and have not been irradiated for at least 3 years, can be placed in the cask pit racks. Since the gate for the opening between the cask pit and the SFP will be removed whenever fuel assemblies are stored in the cask pit, the cask pit and SFP will always be in communication with each other. The cask pit maximum bulk temperature (154.5 °F) is specified in Section 5.8.3, and is based on the maximum calculated SFP bulk temperature for scenario 4A, as listed in Table 5.8.1 (151.42 °F).

Scenarios 3A and 4A are evaluations of an unplanned reactor shutdown occurring 65 days after a previous scheduled refueling outage. This type of full core discharge ("Type A") is described in Section 5.3 of the Holtec Report and page 11 of the SASHC. The transient evaluation period for these scenarios includes a 65 day decay of the fuel in the SFP after the planned refueling outage (coincident with 65 days of operation of the refueled reactor core), then an unplanned shutdown (i.e., "second reactor shutdown").

Table 1

Decay Heat Loads for Partial Core Discharge Scenarios

Discharge Batch	# of Assemblies ( ) = Cumulative	Discharge Date	Decay Heat (Btu/hr)
1	53	March 1982	40,099.32
2	85 (138)	July 1983	72,152.89
3	65 (203)	September 1984	58,636.24
4	65 (268)	March 1988	73,822.39
5	60 (328)	January 1990	63,242.48
6	59 (387)	August 1991	74,574.05
7	61 (448)	March 1993	83,601.08
8	65 (513)	October 1994	98,356.98
9	74 (587)	April 1996	119,350.40
10	77 (664)	April 1998	140,176.60
11	77 (741)	March 2000	153,592.60
12	73 (814)	March 2002	156,539.30
13	73 (887)	March 2004	176,943.80
14	73 (960)	March 2006	204,284.60
15	73 (1033)	March 2008	213,309.70
16	72 (1105)	March 2010	220,983.70
17	72 (1177)	March 2012	232,538.40
18	72 (1249)	March 2014	246,620.70
19	72 (1321)	March 2016	265,758.20
20	72 (1393)	March 2018	295,367.10
21	72 (1465)	March 2020	351,335.20
22	72 (1537)	March 2022	489,991.60
23	72 (1609)	March 2024	960,605.10
24*	72 (1681)	March 2026	11,097,101.03 10,759,077.75

* Note: Decay heat loads coincident with maximum bulk temperature reported for Scenario 1 (first value) and Scenario 2 (second value).

Table 2

Decay Heat Loads for "Type A" Full Core Discharge Scenarios

Discharge Batch	# of Assemblies ( ) = Cumulative	Discharge Date	Decay Heat (Btu/hr)
1	53	March 1982	42,328.48
2	85 (138)	July 1983	76,331.10
3	65 (203)	September 1984	62,084.82
4	65 (268)	March 1988	78,512.34
5	60 (328)	January 1990	67,259.85
6	59 (387)	August 1991	79,533.70
7	61 (448)	March 1993	89,318.64
8	65 (513)	October 1994	105,360.20
9	74 (587)	April 1996	128,094.90
10	77 (664)	April 1998	150,874.30
11	77 (741)	March 2000	165,643.90
12	73 (814)	March 2002	169,360.80
13	73 (887)	March 2004	192,247.10
14	73 (960)	March 2006	223,432.40
15	73 (1033)	March 2008	235,140.70
16	72 (1105)	March 2010	246,620.70
17	72 (1177)	March 2012	265,758.20
18	72 (1249)	March 2014	295,367.10
19	72 (1321)	March 2016	351,335.20
20	72 (1393)	March 2018	489,991.60
21	72 (1465)	March 2020	960,605.10
22	72 (1537)	March 2022	4,242,958.51
23*	177 (1714)	May 2022	20,938,393.61 21,035,277.29

* Note: Decay heat loads coincident with maximum bulk temperature reported for Scenario 3A (first value) and Scenario 4A (second value).

Table 3

Decay Heat Loads for "Type B" Full Core Discharge Scenarios

Discharge Batch	# of Assemblies ( ) = Cumulative	Discharge Date	Decay Heat (Btu/hr)
1	53	March 1982	41192.54
2	85 (138)	July 1983	74194.04
3	65 (203)	September 1984	60329.18
4	65 (268)	March 1988	76120.57
5	60 (328)	January 1990	65208.01
6	59 (387)	August 1991	76987.87
7	61 (448)	March 1993	86396.55
8	65 (513)	October 1994	101754.70
9	74 (587)	April 1996	123604.50
10	77 (664)	April 1998	145341.00
11	77 (741)	March 2000	159372.30
12	73 (814)	March 2002	162716.90
13	73 (887)	March 2004	184236.80
14	73 (960)	March 2006	213309.70
15	73 (1033)	March 2008	223432.40
16	72 (1105)	March 2010	232538.40
17	72 (1177)	March 2012	246620.70
18	72 (1249)	March 2014	265758.20
19	72 (1321)	March 2016	295367.10
20	72 (1393)	March 2018	351335.20
21	72 (1465)	March 2020	489991.60
22	72 (1537)	March 2022	960605.10
23*	177 (1714)	March 2024	24,641,247.20 24,743,019.99

* Note: Decay heat loads coincident with maximum bulk temperature reported for Scenario 3B (first value) and Scenario 4B (second value).

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

REGARDING

LICENSE AMENDMENT REQUEST (LAR) 98-0007

FOR

DAVIS-BESSE NUCLEAR POWER STATION UNIT NUMBER 1

NRC Request for Information:

During a November 23, 1999 conference call, the NRC staff requested additional information regarding general precautions for diving operations in the cask pit.

DBNPS Response:

As stated in the Safety Assessment and Significant Hazards Consideration (SASHC) in License Amendment Request No. 98-0007, in order to recover full core offload capability as quickly as possible, the DBNPS has installed two rack modules in the cask pit, containing a total of 153 storage locations. However, this storage capacity will remain unused until the license amendment associated with the license amendment application is approved by the NRC. Prior to installation, a 10 CFR 50.59 Safety Evaluation was completed demonstrating that the installation of the empty racks does not involve an unreviewed safety question. The additional 153 storage locations allow the core to be fully offloaded for the upcoming ten-year Inservice Inspection, and will also provide full core offload capability after the Twelfth Refueling Outage (12RFO), prior to the planned complete re-racking of the Spent Fuel Pool (SFP).

Installation of the remaining two rack modules, after 12RFO, is intended to provide temporary storage for shuffling of fuel to support a complete re-racking of the SFP. Approval for re-racking of the SFP will be requested in a separate license amendment submittal, to be submitted later. It is planned to relocate all four of the cask pit storage racks into the SFP as part of the final completion of this re-racking project.

The DBNPS currently plans to utilize divers for installation of the remaining two rack modules in the cask pit. These divers may also be needed to remove certain underwater apparatus in the cask pit. No spent fuel will reside in the cask pit during the diving operations. In addition, as SFP storage space will allow, fuel in the SFP will be moved away from the wall dividing the SFP from the cask pit, in order to reduce the exposure to the divers.

Each diver will be equipped with whole body dosimetry with remote, above surface, readouts which will be continuously monitored by Radiation Protection personnel. Contingency measures will be implemented in the case of signal loss with remote reading dosimeters. Divers will be equipped with extremity dosimetry, and will be equipped with underwater survey instrumentation with remote readout capabilities. Divers will also be in continuous communication with Radiation Protection personnel via a dive master. The DBNPS will conduct radiation surveys of the diving area prior to each diving operation and following the movement of any irradiated hardware in the cask pit. The DBNPS will use either visual or physical barriers to ensure that divers maintain a safe distance from spent fuel assemblies or other high radiation sources stored in the SFP. The DBNPS will also use a safety line attached to the diver and manned by a dive tender at all times.

The DBNPS will monitor and control personnel traffic and equipment movement in the SFP area to minimize contamination and to assure that exposures are maintained as low as reasonably achievable. The DBNPS plans to use an underwater vacuum cleaner system to remove any crud and debris from the bottom of the cask pit prior to installation of the remaining two rack modules. This vacuum system will also be used to capture metal filings generated by any cutting performed in the cask pit for removal of obstructions. The DBNPS will take appropriate action to maintain water clarity in the cask pit during rack module installation.

Docket Number 50-346
License Number NPF-3
Serial Number 2628
Enclosure 3

COMMITMENT LIST

THE FOLLOWING LIST IDENTIFIES THOSE ACTIONS COMMITTED TO BY THE DAVIS-BESSE NUCLEAR POWER STATION (DBNPS) IN THIS DOCUMENT. ANY OTHER ACTIONS DISCUSSED IN THE SUBMITTAL REPRESENT INTENDED OR PLANNED ACTIONS BY THE DBNPS. THEY ARE DESCRIBED ONLY FOR INFORMATION AND ARE NOT REGULATORY COMMITMENTS. PLEASE NOTIFY THE MANAGER – REGULATORY AFFAIRS (419-321-8466) AT THE DBNPS OF ANY QUESTIONS REGARDING THIS DOCUMENT OR ANY ASSOCIATED REGULATORY COMMITMENTS.

COMMITMENTS	DUE DATE
Regarding installation of the two remaining cask pit rack modules, ensure that general precautions are established for diving operations in the cask pit (See Enclosure 2 for details).	Prior to commencement of diving operations in the cask pit, during installation of the two remaining cask pit rack modules.