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Your ref: Docket No. 52-006
Our ref: DCP_NRC_003044

September 13, 2010

Subject: AP1000 Response to Request for Additional Information (TR44)

Westinghouse is submitting a response to the NRC request for additional information (RAI) on SRP Section TR44. This RAI response is submitted in support of the AP1000 Design Certification Amendment Application (Docket No. 52-006). The information included in this response is generic and is expected to apply to all COL applications referencing the AP1000 Design Certification and the AP1000 Design Certification Amendment Application.

Enclosure 1 provides the response for the following RAI(s):

RAI-TR44-06 R4

Questions or requests for additional information related to the content and preparation of this response should be directed to Westinghouse. Please send copies of such questions or requests to the prospective applicants for combined licenses referencing the AP1000 Design Certification. A representative for each applicant is included on the cc: list of this letter.

Very truly yours,

R. F. Ziesing
Director, U. S. Licensing

/Enclosure

1. Response to Request for Additional Information on SRP Section TR44

D063
NRO

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ENCLOSURE 1

Response to Request for Additional Information on SRP Section TR44

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-TR44-006
Revision: 4

***Question:* (Revision 0)**
A vertical movement of 2 inches of a fuel assembly is defined as the criticality limit in Section 2.8.5, and the impact analysis shows that quite a number of fuel assemblies will have more than 2 inches displacement. It appears that a rack design with only a 2 inches space between the bottom of the baseplate and the top of the floor would eliminate this risk. Please explain why the design has a space larger than 2 inches.

Staff Assessment (Revision 1): Response similar to response for spent fuel racks. See RAI-TR54-10.

As a result of the October 8-12, 2007 audit, **confirmatory** pending submittal of supplemental response and the application of the same resolution as noted in TR54-10, to the new fuel rack.

New Question: (Revision 2 and 3)

Evaluate New Fuel Rack (NFR) mechanical accident calculation conclusions due to dropping a new fuel assembly (and associated handling tool) over the top of the New Fuel Rack and impacting the baseplate directly over a pedestal location; or justify why this evaluation is not necessary.

New Question: (Revision 4)

NRC requests clarification on the general issues noted below during discussions:

1) unlikelihood of a dropped new fuel assembly,
2) new fuel rack energy absorption statement,
3) new fuel pit cover function,
4) new fuel drop has no adverse impacts to safety-related systems and radiological consequences

Westinghouse Response:

Response: (Revision 0 and 1) (Superseded by Revision 2)
~~Each storage cell is 193.5 inches in length and rests on top of a base plate whose top is 5 inches above the concrete floor. Note that each Metamic poison panel is 172 inches long and has a bottom elevation that is 6.23 inches above the top of the base plate. The active fuel region of each fuel assembly begins at an elevation 8.23 inches above the base plate. Therefore, the~~

~~bottom elevation of the Metamic poison panel is positioned to be two inches lower than the bottom elevation of the active fuel.~~

~~Therefore, the results of the criticality analyses are bounding even if the fuel assembly is vertically displaced downward by up to two inches as a result of the hypothetical fuel assembly drop. The two inch vertical displacement of the fuel assemblies, mentioned in Technical Report 44 is not a criticality limit.~~

~~The criticality analyses summarized in COL Technical Report APP-GW-GLR-030 Rev.0 "New Fuel Storage Rack Criticality Analysis" addressed the hypothetical fuel assembly drop in subsection 2.4.2 as follows:~~

~~"The resulting deformation on the base plate following a drop of fuel assembly straight through an empty cell impacting the rack baseplate is discussed in subsection 2.8.5 of Reference 4. To conservatively bound the deformation results for the base plate, the bottom elevations of 25 fuel assemblies were lowered by 5 inches. (Note that the base plate is 3/4 inches thick and is normally 4.25 inches above the floor.) This is a five-by-five array of fuel assemblies centered on the empty cell impacted by the dropped fuel assembly (refer to Figure 2-10 of Reference 4). Even with the bottom elevation of the active fuel in 25 fuel assemblies lowered by 5 inches, the criticality design limits given in Section 2.1 are still met."~~

~~Since the criticality analysis demonstrates that the stored fuel assemblies remain subcritical following a hypothetical fuel assembly drop, the space between the bottom of the baseplate and the new fuel storage vault floor is not designed to control criticality, but to prevent the new fuel vault floor from an impact strike. In other words, the rack baseplate is raised high enough above the new fuel storage vault floor (4.25") to prevent the baseplate from contacting the floor when it deforms under impact.~~

~~Westinghouse Supplemental Response following May 21 and 22, 2008 Technical Review:~~

~~The hypothetical drop, wherein a fuel assembly travels downward through an empty storage cell and impacts the baseplate was re-analyzed in Revision 1 of APP-FS02-Z0C-001, "Analysis of AP1000 Fuel Storage Racks Subjected to Fuel Drop Accidents" for the new fuel rack. The new analysis model incorporates the following changes (as discussed in the RAI responses to TR44-03, TR44-05, and TR44-07): (1) the baseplate is modeled with thick shell elements, (2) the effect of the stored fuel assemblies is accounted for by increasing the mass density of the baseplate, and (3) strain rate effects are considered for the welds only. Based on the re-analyses, the maximum vertical displacement of the new fuel rack baseplate is 2.41", which is less than the 5" displacement considered in the criticality analysis. Therefore, the existing criticality analysis remains bounding.~~

~~These improvements were reviewed in Revision 1 of APP-FS02-Z0C-001 by the NRC staff and found to be technically acceptable for the similar spent fuel RAI-TR54-10 during the May 21 and 22 technical review. As a result of that technical review, this item was resolved for the spent fuel racks. Because Westinghouse applied the same approach for the new fuel racks and obtained conservative results and the NRC staff has already reviewed and accepted Revision 1 of APP-FS02-Z0C-001, which also applies to the new fuel rack, Westinghouse considers this item to be resolved for the new fuel rack as well.~~

~~Figure 2-10 of TR44 was revised to reflect the updated results of the drop analysis; see the Technical Report Revision section for details.~~

Westinghouse Response: (Revision 2 and 3)

The current design and criticality analysis information for the new fuel racks is located in Reference 1 and Reference 3.

Based on considerations and responses noted in OI-SRP9.1.4-SBPA-03 R3 regarding fuel handling hoist operations and drop scenarios involving the new fuel and new fuel pit, the only hoist capable of moving new fuel above the operating floor is a single failure proof hoist designed to criteria in NUREG-0554. Drops from a single failure proof hoist are deemed unlikely and do not require further analysis. Westinghouse has taken this position for the postulated new fuel drop accident scenario.

In the unlikely event of a new fuel assembly dropping onto the new fuel rack, the consequences are purely economic. Although damage to the top of the rack could include plastic deformation of the fixed poison panels resulting in negative reactivity, the fundamental safety criteria to maintain a subcritical configuration is still met. The New Fuel Pit is a dry and drained above grade pit. The absence of a pooled water moderator and the dropping of an un-irradiated new fuel assembly offer the most compelling safety assessment to maintain sub-criticality after a new fuel assembly drop accident. Impacts over the new fuel rack pedestal or directly onto the floor will not result in damage to any safety related SSCs or there will be no radiological consequences that would impact the health and safety of the public. The DCD indicates that there are no safety related systems or components presently housed in the New Fuel Pit or the room directly below it, the resin transfer pump/valve room.

Because the likelihood of a new fuel assembly being dropped into the new fuel pit and onto the new fuel racks is minimal, it is unnecessary to evaluate other drop scenarios for the new fuel storage rack. Based on the low probability of the new fuel assembly drop accident, the next revision of TR44 will remove the terms about "non-credible" from the detailed discussions, tables, and figures that reference applicability of the new fuel pit drop accident scenarios.

Westinghouse Response: (Revision 4)

The clarification response to each of the general issues noted above is listed below:

Item 1: Westinghouse will clarify the proposed change to DCD Section 9.1.1.3 that stated a new fuel drop event was not postulated. It will include statement that "...dropping a new fuel assembly is deemed unlikely, poses no safety or radiological consequences, and therefore does not require analysis."

Item 2: Westinghouse will clarify the proposed change to DCD Section 9.1.1.3 and eliminate reference to the traditional discussion about new fuel rack energy absorption capabilities. Since the new fuel drop onto the new fuel rack is an unlikely event and does not require analysis, WEC will delete the first sentence in fifth paragraph of DCD Section 9.1.1.3 from the DCD that states, "The rack is also designed with adequate energy absorption capabilities to withstand the impact of a dropped fuel assembly from the maximum lift height of the fuel handling machine."

Item 3: Westinghouse will clarify the summary discussion in DCD Section 9.1.1.3 safety evaluation about new fuel pit cover function and removal during fuel handling operations. The new fuel pit has a large cover that contains smaller openings/ports that access each new fuel assembly cell and have their own individual cover. Each small cover is opened/removed sequentially during new fuel transfer operations to gain access to the affected assembly and is then replaced. Both covers typically remain closed to prevent debris and foreign materials from entering the new fuel pit, new fuel rack, and new fuel assemblies.

Item 4: Westinghouse offers the following amplification and clarification to the RAI Revision 3 Paragraph 3 response above regarding no damage to safety-related SSCs and no radiological consequences to the public. Impacts over the new fuel rack pedestal or directly onto the floor will not result in damage to any safety-related SSCs; and will not result in radiological consequences that would impact the health and safety of the public. The DCD Section 3H.2 notes that mechanical equipment located in Auxiliary Building Areas 5 and 6 (i.e. spent fuel cooling, residual heat removal, and liquid waste processing) is generally non-safety related. The DCD Section 9A.3.1.3.1.2 and Figure 9A-1 contain a safe shutdown evaluation which states that there are no safe shutdown components housed in Fire Area 1200 AF 02 for the New Fuel Pit (Fire Zone 1200 AF 12562) or the resin transfer pump/valve room (Fire Zone 1236 AF 12372) located directly below it.

References:

1. APP-GW-GLR-026, Revision 4, July 2010, “New Fuel Storage Rack Structural/Seismic Analysis,” (Technical Report Number 44, TR44)
2. ~~APP-FS02-Z0C-001, Revision 2, "Analysis of AP1000 Fuel Storage Racks Subjected to Fuel Drop Accidents~~” **(Superseded by Revision 2)**
3. APP-GW-GLR-030 Revision 0, May 2006, “New Fuel Storage Rack Criticality Analysis,” (Technical Report Number 67, TR67)

Design Control Document (DCD) Revision:

DCD Changes: (Revision 0 and 1): None

DCD Changes: (Revision 2 and 3)

A summary of proposed DCD changes associated with the discussion above is summarized below with the DCD mark-up pages attached.

DCD Changes: (Revision 4)

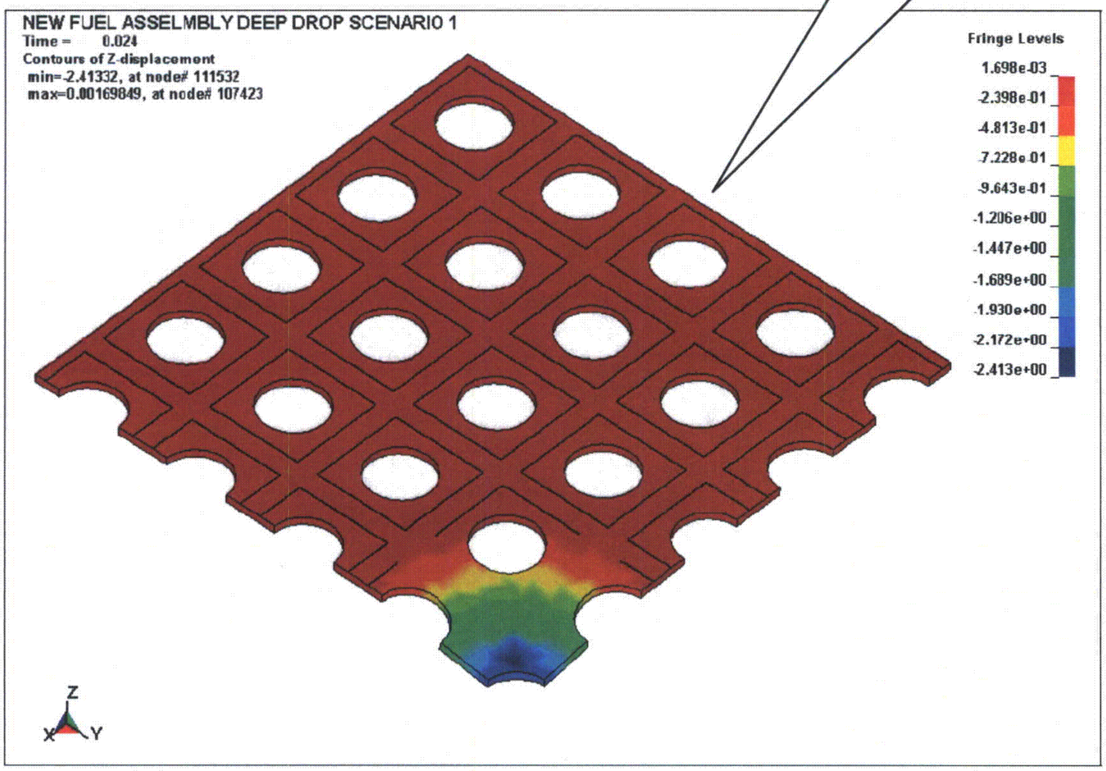
A summary of the proposed RAI Revision 2, 3, and 4 DCD changes is summarized below with the DCD mark-up pages attached.

PRA Revision:
None

Technical Report (TR) Revision:

TR Changes: (Revision 1) – (Superseded by Revision 2)
~~Yes - Figure 2-10 was replaced by the following figure:~~

FIGURE DELETED



~~Figure 2-10 Baseplate Deformation Resulting from Fuel Assembly Drop onto Baseplate (2.41 inch Maximum Displacement Directly under Impact Location~~ **(Superseded by Revision 2)**

TR Changes: (Revision 2 and 3)
The next revision of TR44 will remove the terms about "non-credible" from the detailed discussions, tables, and figures that reference applicability of the new fuel assembly drop accident scenarios.

TR Changes: (Revision 4)
None. The changes noted in RAI Revision 2 and 3 were incorporated into TR44 (APP-GW-GLR-029, Rev. 5) as submitted to the NRC by letter DCP_NRC_003010 dated 8/17/10."

Summary of DCD changes is outlined below and markup pages are attached:

DCD Rev. 17 Section or Table	DCD Rev. 17 Page Number	DCD Change Summary Statement
Tier 1, Section 2.1.1, Item 7	Pg. 2.1.1-1	Add clarification that the drop accident only applies to a spent fuel assembly drop accident over the spent fuel storage racks.
Tier 1, Table 2.1.1-1, Item 7	Pg. 2.1.1-3	**DC-** Add clarification that the drop accident only applies to a spent fuel assembly drop accident over the spent fuel storage racks. **ITA.iv** - Clarify drop analysis requirement is only for spent fuel racks **AC.iv** - Clarify drop analysis requirement is only for spent fuel racks
9.1.1.2.1.A	Pg. 9.1-3	Delete fourth bullet (applied load) for the new fuel assembly drop accident since it is an unlikely event.
9.1.1.2.1.B	Pg. 9.1-3	Amplify reference to the term "new fuel rack".
9.1.1.2.1.C	Pg. 9.1-3 and 9.1-4	Add "New" to title. Delete the three ~~first two~~ existing paragraphs. Replace with new statement ~~paragraph~~ to clarify that a new fuel assembly drop accident is an unlikely event and need not be analyzed. Amplify reference to the term "new fuel rack".
9.1.1.3	Pg. 9.1-4	Paragraph 3: Clarify new fuel pit cover removal during fuel handling. Paragraph 5: Delete first sentence in fifth paragraph that discusses fuel rack energy absorption; and replace with statement that a new fuel assembly drop accident is an unlikely event, poses no SSC or radiological hazards, and need not be analyzed.
9.1.4.2.4	Pg. 9.1-31, Item B	Add sentence to reference NUREG-0554.
Table 9.1-1	Pg. 9.1-52	Add new note #3 about unlikelihood and non-applicability of the accidental load drop combination for a new fuel rack based on use of a single failure proof hoist. Clarify use of notes.
Table 14.3-2 (pg. 10 of 17)	14.3-26	Delete existing statement. Replace with new statement (same as 9.1.1.2.1.C above) to clarify that a fuel assembly drop accident is an unlikely event and need not be analyzed.

DCD changes to Tier 1, Section 2.1.1, Item 7

2.1.1 Fuel Handling and Refueling System

Design Description

The fuel handling and refueling system (FHS) transfers fuel assemblies and core components during fueling operations and stores new and spent fuel assemblies in the new and spent fuel storage racks. The refueling machine (RM) and the fuel transfer tube are operated during refueling mode. The fuel handling machine (FHM) is operated during normal modes of plant operation, including startup, power operation, cooldown, shutdown and refueling. The component locations of the FHS are as shown in Table 2.1.1-2.

1. The functional arrangement of the FHS is as described in the Design Description of this Section 2.1.1.

2. The FHS has the RM, the FHM, and the new and spent fuel storage racks.

3. The FHS preserves containment integrity by isolation of the fuel transfer tube penetrating containment.

4. The RM and FHM/spent fuel handling tool (SFHT) gripper assemblies are designed to prevent opening while the weight of the fuel assembly is suspended from the grippers.

5. The lift height of the RM mast and FHM hoist(s) masts is limited such that the minimum required depth of water shielding is maintained.

6. The RM and FHM are designed to maintain their load carrying and structural integrity functions during a safe shutdown earthquake.

7. The new and spent fuel storage racks maintain the effective neutron multiplication factor less than the required limits during normal operation, design basis seismic events, and design basis dropped spent fuel assembly accidents over the spent fuel storage racks.

Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.1.1-1 specifies the inspections, tests, analyses, and associated acceptance criteria for the FHS.

Table 2.1.1-1 (cont.)
Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
7. The new and spent fuel storage racks maintain the effective neutron multiplication factor less than the required limits during normal operation, design basis seismic events, and design basis dropped spent fuel assembly accidents over the spent fuel storage racks.	i) Analyses will be performed to calculate the effective neutron multiplication factor in the new and spent fuel storage racks during normal conditions.	i) The calculated effective neutron multiplication factor for the new and spent fuel storage racks is less than 0.95 under normal conditions.
	ii) Inspection will be performed to verify that the new and spent fuel storage racks are located on the nuclear island.	ii) The new and spent fuel storage racks are located on the nuclear island.
	iii) Seismic analysis of the new and spent fuel storage racks will be performed.	iii) A report exists and concludes that the new and spent fuel racks can withstand seismic design basis dynamic loads and maintain the calculated effective neutron multiplication factor less than 0.95.
	iv) Analysis of the spent fuel storage racks under design basis dropped spent fuel assembly loads will be performed.	iv) A report exists and concludes that the spent fuel racks can withstand design basis dropped spent fuel assembly loads and maintain the calculated effective neutron multiplication factor less than 0.95.

9.1.1.2.1 New Fuel Rack Design

A. Design and Analysis of the New Fuel Rack

The new fuel storage rack array center-to-center spacing of nominally 10.9 inches provides a minimum separation between adjacent fuel assemblies sufficient with neutron absorbing material to maintain a subcritical array. The seismic and stress analyses of the new fuel rack consider the condition of full fuel assembly loadings. The rack is evaluated for the safe shutdown earthquake condition against the seismic Category I requirements. A stress analysis is performed to verify the acceptability of the critical load components and paths under normal and faulted conditions. The rack rests on the pit floor.

The dynamic response of the fuel rack assembly during a seismic event is the condition which produces the governing loads and stresses on the structure. The new fuel storage rack is designed to meet the seismic Category I requirements of Regulatory Guide 1.29.

Loads and Load Combinations

The applied loads to the new fuel rack are:

- Dead loads
- Live loads - effect of lifting the empty rack during installation
- Seismic forces of the safe shutdown earthquake
- ~~Fuel assembly drop accident~~
- Fuel handling machine uplift while over the new fuel rack - postulated stuck new fuel assembly

Table 9.1-1 shows loads and load combinations considered in the analyses of the new fuel rack.

The margins of safety for the new fuel rack in the multi-direction seismic event are produced using loads obtained from the seismic analysis based on the simultaneous application of three statistically independent, orthogonal accelerations.

B. Fuel Handling Machine Uplift Analysis

An analysis is performed to demonstrate that the new fuel rack can withstand a maximum uplift load of 4000 pounds. This load is applied to a postulated stuck fuel assembly. Resultant new fuel rack stresses are evaluated against the stress limits and are demonstrated to be acceptable. It is demonstrated that there is no change in new fuel rack geometry of a magnitude which causes the criticality criteria to be violated.

C. New Fuel Assembly Drop Accident Analysis

During normal fuel handling operations, a single failure proof hoist designed to meet the requirements of NUREG-0554 is the only hoist capable of moving new fuel above the operating floor. Per the design criteria contained in NUREG-0554, drops from a single failure proof hoist are deemed unlikely and do not require analysis. The consequences of such a drop are minimal since no safety related equipment would be impacted and there are no radiological releases with new unirradiated fuel. Because the likelihood of a new fuel assembly being dropped into the new fuel pit and onto the new fuel racks is minimal, it is unnecessary to evaluate drop scenarios for the new fuel storage rack.

9.1.1.3 Safety Evaluation

The new fuel rack, being a seismic Category I structure, is designed to withstand normal and postulated dead loads, live loads, loads resulting from thermal effects, and loads caused by the safe shutdown earthquake event.

The design of the new fuel rack is such that K_{eff} remains less than or equal to 0.95 with new fuel of the maximum design basis enrichment. For a postulated accident condition of flooding of the new fuel storage pit~~area~~ with unborated water, K_{eff} does not exceed 0.98.

The criticality evaluation considers the inherent neutron absorbing effect of the materials of construction, including fixed neutron absorbing "poison" material.

The new fuel rack is located in the new fuel storage pit, which has a large cover to protect the new fuel from debris. This large cover contains smaller openings/ports that access each new fuel assembly cell and have their own individual cover. Each small cover is opened/removed sequentially during new fuel transfer operations to gain access to the affected assembly and is then replaced. Both covers typically remain closed to prevent debris and foreign materials from entering the new fuel pit, new fuel rack, and new fuel assemblies. No loads are required to be carried over the new fuel storage pit while the large cover is in place. The large cover is designed such that it will not fall and damage the new fuel or new fuel rack during a seismic event. Administrative controls are utilized when either of the covers are ~~is~~ removed for new fuel transfer operations to limit the potential for dropped object damage.

Based on the conservative design and operation of the single failure proof FHM hoist and associated lifting tools to handle unirradiated new fuel assemblies, dropping a new fuel assembly is deemed unlikely, poses no safety or radiological consequences, and therefore does not require analysis. ~~The rack is also designed with adequate energy absorption capabilities to withstand the impact of a dropped fuel assembly from the maximum lift height of the fuel handling machine~~. Handling equipment (cask handling crane) capable of carrying loads heavier than fuel components is prevented from traveling over the fuel storage area. The new fuel storage rack can withstand an uplift force of 4000 pounds.

Materials used in new fuel rack construction are compatible with the storage pit environment, and surfaces that come into contact with the fuel assemblies are made of annealed austenitic stainless steel. Structural materials are corrosion resistant and will not contaminate the fuel assemblies or storage pit environment. Neutron absorbing "poison" material used in the new fuel rack design has been qualified for the storage environment. Venting of the neutron absorbing material is considered in the detailed design of the new fuel storage rack.

9.1.4.2.4 Component Description

A. Fuel Transfer Tube

The fuel transfer tube penetrates the containment and spent fuel area and provides a passageway for the conveyor car during refueling. During reactor operation, the fuel transfer tube is sealed at the containment end and acts as part of the containment pressure boundary. See subsection 3.8.2.1.5 for discussion of the fuel transfer penetration.

B. Fuel Handling Machine

The fuel handling machine performs fuel handling operations in the new and spent fuel handling area. It also provides a means of tool support and operator access for long tools used in various services and handling functions. The fuel handling machine is equipped with two 2-ton hoists, one of which is single failure proof and is designed according to NUREG-0554.

Table 9.1-1 **LOADS AND LOAD COMBINATIONS FOR FUEL RACKS**	
Load Combination	**Service Level**
$D + L$ $D + L + T_o$	Level A (Note 1, Note 2)
$D + L + T_a$ $D + L + T_o + P_f$	Level B (Note 1, Note 2)
$D + L + T_a + E'$	Level D (Note 2)
$D + L + F_d$	The functional capability of the fuel racks should be demonstrated. . (Note 3)

Notes:

1. There is no operating basis earthquake (OBE) for the AP1000 plant.
2. The fuel racks are freestanding; thus, there is minimal or no restraint against free thermal expansion at the base of the rack. As a result, thermal loads applied to the rack (T_o and T_a) produce only local (secondary) stresses.
3. This load combination is not required for the new fuel rack since a load drop is deemed an unlikely accident with a single failure proof hoist.

Abbreviations—are those used in NUREG-0800, Section 3.8.4 (including Appendix D) of the Standard Review Plan (SRP):

D = Dead weight induced loads (including fuel assembly weight)
L = Live load (not applicable to fuel racks since there are no moving objects in the rack load path)
F_d = Force caused by the accidental drop of the heaviest load from the maximum possible height
P_f = Upward force on the racks caused by postulated stuck fuel assembly
E' = Safe shutdown earthquake (SSE)
T_o = Differential temperature induced loads based on the most critical transient or steady-state condition under normal operation or shutdown conditions
T_a = Differential temperature induced loads based on the postulated abnormal design conditions

Table 14.3-2 (Sheet 10 of 17) **DESIGN BASIS ACCIDENT ANALYSIS**		
Reference	**Design Feature**	**Value**
Section 7.4.3.1	If temporary evacuation of the main control room is required because of some abnormal main control room condition, the operators can establish and maintain safe shutdown conditions for the plant from outside the main control room through the use of controls and monitoring located at the remote shutdown workstation.	
Section 7.4.3.1.1	The remote shutdown workstation equipment is similar to the operator workstations in the main control room and is designed to the same standards. One remote shutdown workstation is provided.	
Section 7.4.3.1.3	The remote shutdown workstation achieves and maintains safe shutdown conditions from full power conditions and maintains safe shutdown conditions thereafter.	
Section 7.5.4	The protection and safety monitoring system provides signal conditioning, communications, and display functions for Category 1 variables and for Category 2 variables that are energized from the Class 1E uninterruptible power supply system.	
Section 7.6.1.1	An interlock is provided for the normally closed motor-operated normal residual heat removal system inner and outer suction isolation valves. Each valve is interlocked so that it cannot be opened unless the reactor coolant system pressure is below a preset pressure.	
Section 8.2.2	Following a turbine trip during power operation, the reverse-power relay will be blocked for a minimum time period (sec).	≥15
Section 8.3.2.1.2	The non-Class 1E dc and UPS system (EDS) consists of the electric power supply and distribution equipment that provides dc and uninterruptible ac power to nonsafety-related loads.	
Section 9.1.1.2.1.C	During normal fuel handling operations, a single failure proof hoist designed to meet the requirements of NUREG-0554 is the only hoist capable of moving new fuel above the operating floor. Per the design criteria contained in NUREG-0554, drops from a single failure proof hoist are deemed unlikely and do not require analysis. The consequences of such a drop are minimal since no safety related equipment would be impacted and there are no radiological releases with new unirradiated fuel. Because the likelihood of a new fuel assembly being dropped into the new fuel pit and onto the new fuel racks is minimal, it is unnecessary to evaluate drop scenarios for the new fuel storage rack. ~~In the unlikely event of a dropping of an unirradiated fuel assembly, accidental deformation of the fuel rack is determined and evaluated in the criticality analysis to demonstrate that it does not cause criticality criterion to be violated.~~	
Section 9.1.3.5	The spent fuel pool is designed such that a water level is maintained above the spent fuel assemblies for at least 7 days following a loss of the spent fuel cooling system using only on-site makeup water sources (See Table 9.1-4).	