

17. Westinghouse Topical Report, WCAP-8567-P-A, "Improved Thermal Design Procedure," February 1989 (ML19297H628).
18. Diablo Canyon Units 1 & 2 Technical Specifications.
19. ANSI/ANS-5.1-1979, "American National Standard for Decay Heat Power In Light Water Reactors," August 29, 1979.
20. Westinghouse Topical Report, WCAP-16996-P-A, Revision 1, "Realistic LOCA Evaluation Methodology Applied to the Full Spectrum of Break Sizes (FULL SPECTRUM LOCA Methodology)," November 2016 (ML16343A232).
21. ADAMS Accession Number ML19316A109, "Diablo Canyon Nuclear Power Plant, Units 1 and 2 – Issuance of Amendment Nos. 234 and 236 to Revise Technical Specification 5.6.5b, 'Core Operating Limits Report (COLR),' for Full Spectrum Loss-of-Coolant Accident Methodology (EPID L2018-LLA-0730)," dated January 9, 2020.
22. PG&E Letter DCL-19-071, "Supplement to License Amendment Request 18-02, License Amendment Request to Revise Technical Specification 5.6.5b, 'Core Operating Limits Report (COLR)' for Full Spectrum Loss-of-Coolant Accident Methodology," dated September 23, 2019 (ML19266A657).
23. Florida Power and Light (FPL) Letter, "Turkey Point Nuclear Generating Station, Unit 3 and 4 - License Amendment Request 278, Incorporate Advanced Fuel Products, Extend Surveillance Intervals and 10 CFR 50.46 Exemption Request to Facilitate Transition to 24-Month Fuel Cycles," dated November 15, 2023 (ML23320A028).
24. ADAMS Accession Number ML25043A428, "Turkey Point, Units 3 & 4 - Issuance of Amendment Nos. 301 and 294 Regarding Incorporation of Advanced Fuel Products and Extension of Surveillance Intervals to Facilitate Transition to a 24-Month Fuel Cycle (EPID L-2023-LLA-0161) - Non-Proprietary," dated February 12, 2025.
25. Florida Power and Light Letter, "Response to Request for Additional Information Regarding Turkey Point License Amendment Request (278) to Facilitate a Transition to 24-Month Fuel Cycles," dated October 31, 2024, (ML24305A144).
26. Southern Nuclear Company (SNC) Letter, "Vogtle Electric Generating Plant, Units 1 and 2, Response to NRC Requests for Information License Amendment Request and Exemptions to Allow Use of Lead Test Assemblies for Accident-Tolerant Fuel," dated September 13, 2022 (ML22256A198).
27. ADAMS Accession Number ML23093A028, "Vogtle Electric Generating Plant, Units 1 and 2 - Issuance of Amendments Nos. 220 And 203,

Regarding Use of Accident Tolerant Fuel Lead Test Assemblies (EPID L-2022-LLA-0097),” dated August 1, 2023.

28. Constellation Energy (formerly Exelon Generation) Letter, “Byron Station Unit 2 – License Amendment Request (LAR) to Utilize Accident Tolerant Fuel Lead Test Assemblies,” dated March 8, 2018 (ML18067A431).
29. ADAMS Accession Number ML19038A017, “Byron Station, Unit No. 2 - Issuance of Amendment No. 207 Regarding Use of Accident Tolerant Fuel Lead Test Assemblies (EPID L-2018-LLA-0064),” dated April 3, 2019.
30. Constellation Energy (formerly Exelon Generation) Letter, “Supplement #3 to License Amendment Request to Utilize Accident Tolerant Fuel Lead Test Assemblies,” dated January 16, 2019 (ML19016A491).

Proposed Technical Specification Changes (Markups)

Replace with new Figure 2.1.1-1

UNITS 1 & 2

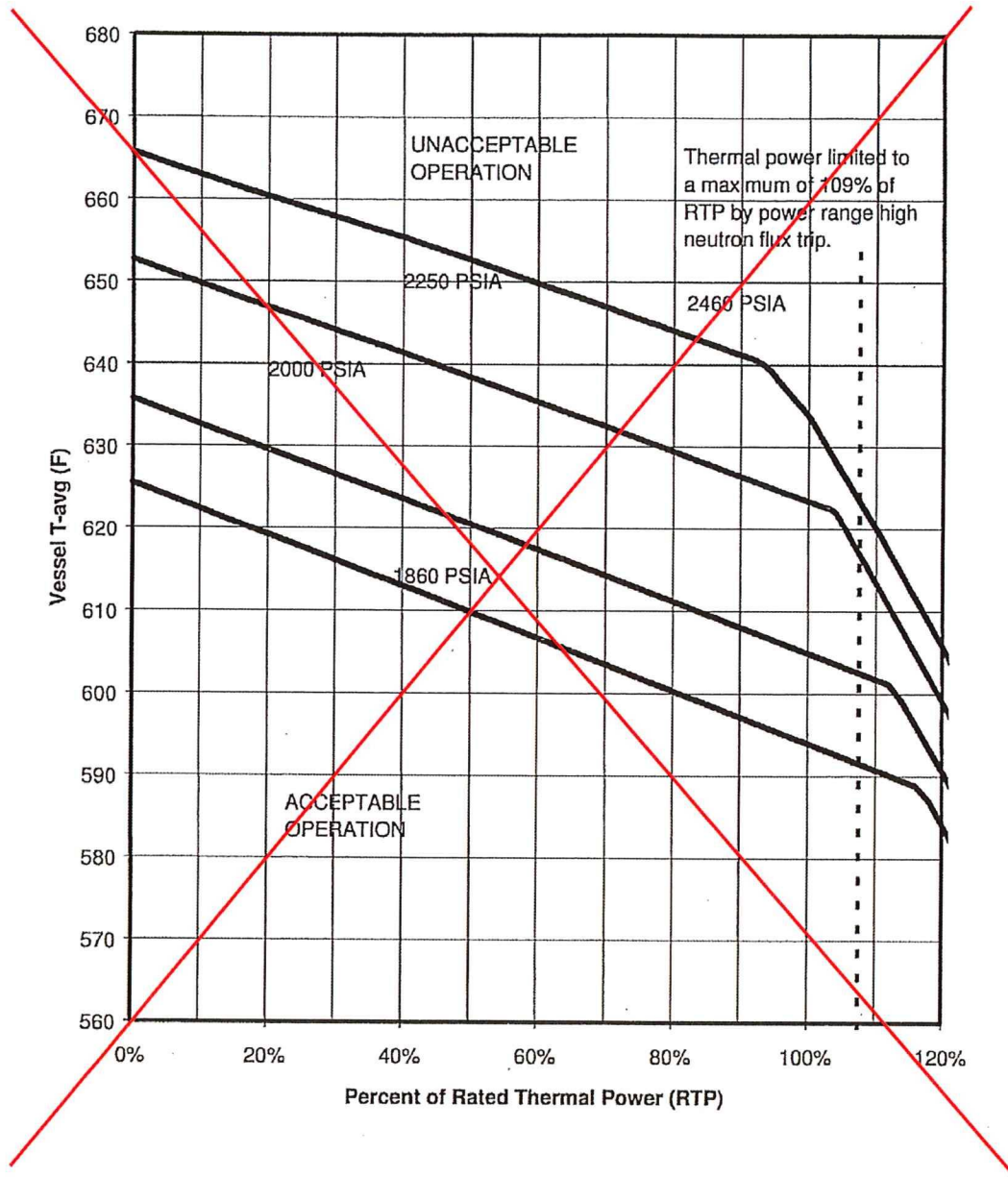
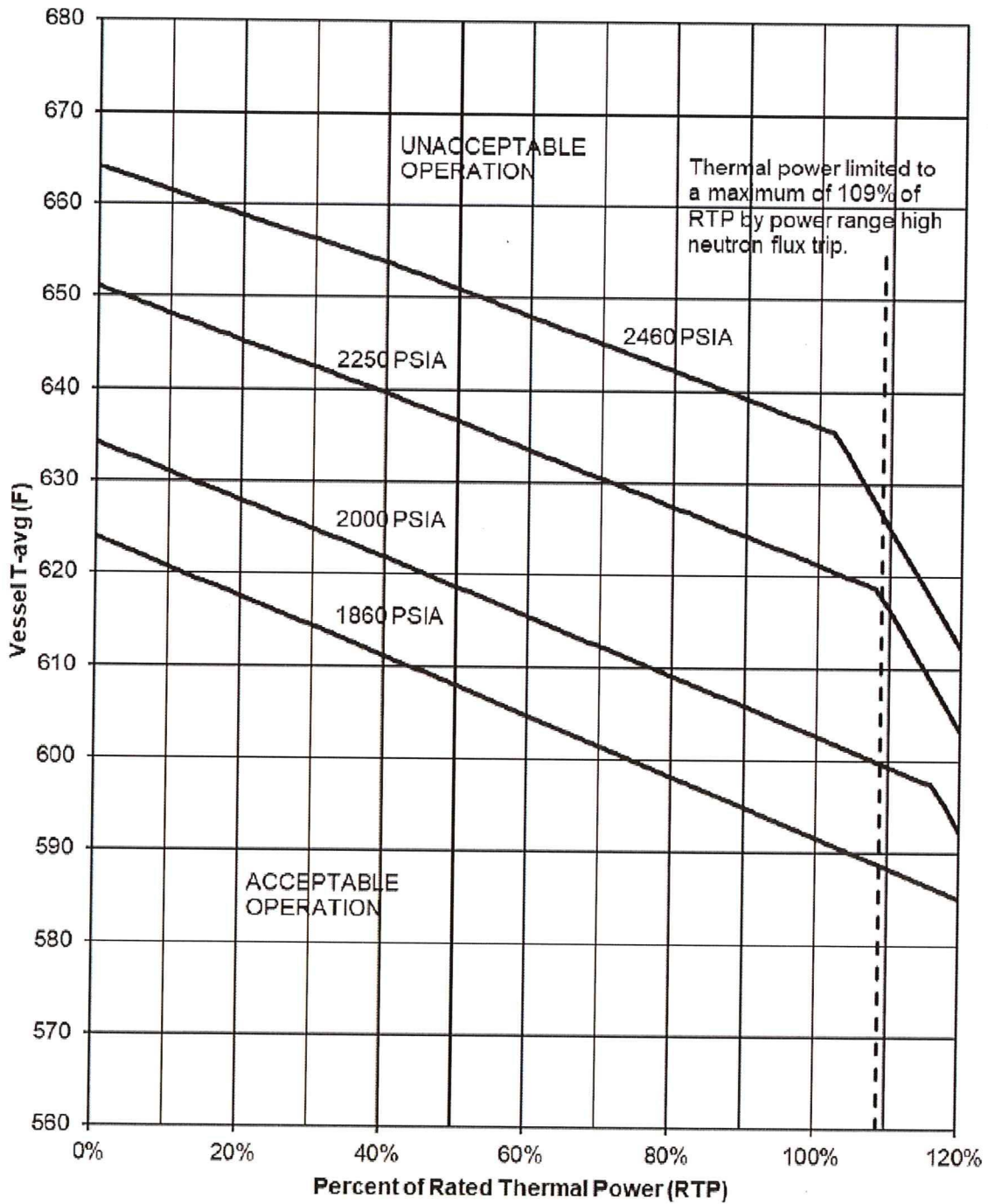


Figure 2.1.1-1
REACTOR CORE SAFETY LIMIT

Insert new Figure 2.1.1-1

UNITS 1 & 2



4.0 DESIGN FEATURES

4.1 Site Location

The DCPD site consists of approximately 750 acres which are adjacent to the Pacific Ocean in San Luis Obispo County, California, and is approximately twelve (12) miles west-southwest of the city of San Luis Obispo.

4.2 Reactor Core

4.2.1 Fuel Assemblies

, with or without dopants,

The reactor shall contain 193 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy, ZIRLO®, or Optimized ZIRLO™ clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO₂) as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core locations.

4.2.2 Control Rod Assemblies

The reactor core shall contain 53 control rod assemblies. The control rod material shall be silver, indium, and cadmium, as approved by the NRC.

4.3 Fuel Storage

4.3.1 Criticality

- 4.3.1.1 The permanent spent fuel pool storage racks are designed and shall be maintained with:
- Fuel assemblies having a maximum U-235 enrichment of 5.0 weight percent;
 - $k_{\text{eff}} < 1.0$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1.2.3 of the FSAR;
 - $k_{\text{eff}} \leq 0.95$ if fully flooded with water borated to 806 ppm, which includes an allowance for uncertainties as described in Section 9.1.2.3 of the FSAR;
 - A nominal 11 inch center to center distance between fuel assemblies placed in the fuel storage racks;

(continued)

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

1. WCAP-10216-P-A, "Relaxation of Constant Axial Offset Control F_Q Surveillance Technical Specification," (Westinghouse Proprietary),
2. WCAP-9272-P-A, "Westinghouse Reload Safety Evaluation Methodology," (Westinghouse Proprietary),
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4. WCAP-16996-P-A, Revision 1, "Realistic LOCA Evaluation Methodology Applied to the Full Spectrum of Break Sizes (FULL SPECTRUM LOCA Methodology),"
5. WCAP-17661-P-A, Revision 1, "Improved RAOC and CAOC F_Q Surveillance Technical Specifications,"
6. WCAP-8567-P-A, "Improved Thermal Design Procedure,"
7. WCAP-16045-P-A, "Qualification of the Two Dimensional Transport Code PARAGON,"
8. WCAP-16045-P-A, Addendum 1-A, "Qualification of the NEXUS Nuclear Data Methodology," and
9. WCAP-12610-P-A and CENPD-404-P-A, Addendum 1-A, "Optimized ZIRLO™"
10. WCAP-14565-P-A, "VIPRE-01 Modeling and Qualification for Pressurized Water Reactor Non-LOCA Thermal-Hydraulic Safety Analysis," and
11. WCAP-18240-P-A, "Westinghouse Thermal Design Procedure."

(continued)

Revised Technical Specification Pages (Clean)

Remove Page

2.0-2
4.0-1
5.0-20

Insert Page

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4.0-1
5.0-20

UNITS 1 & 2

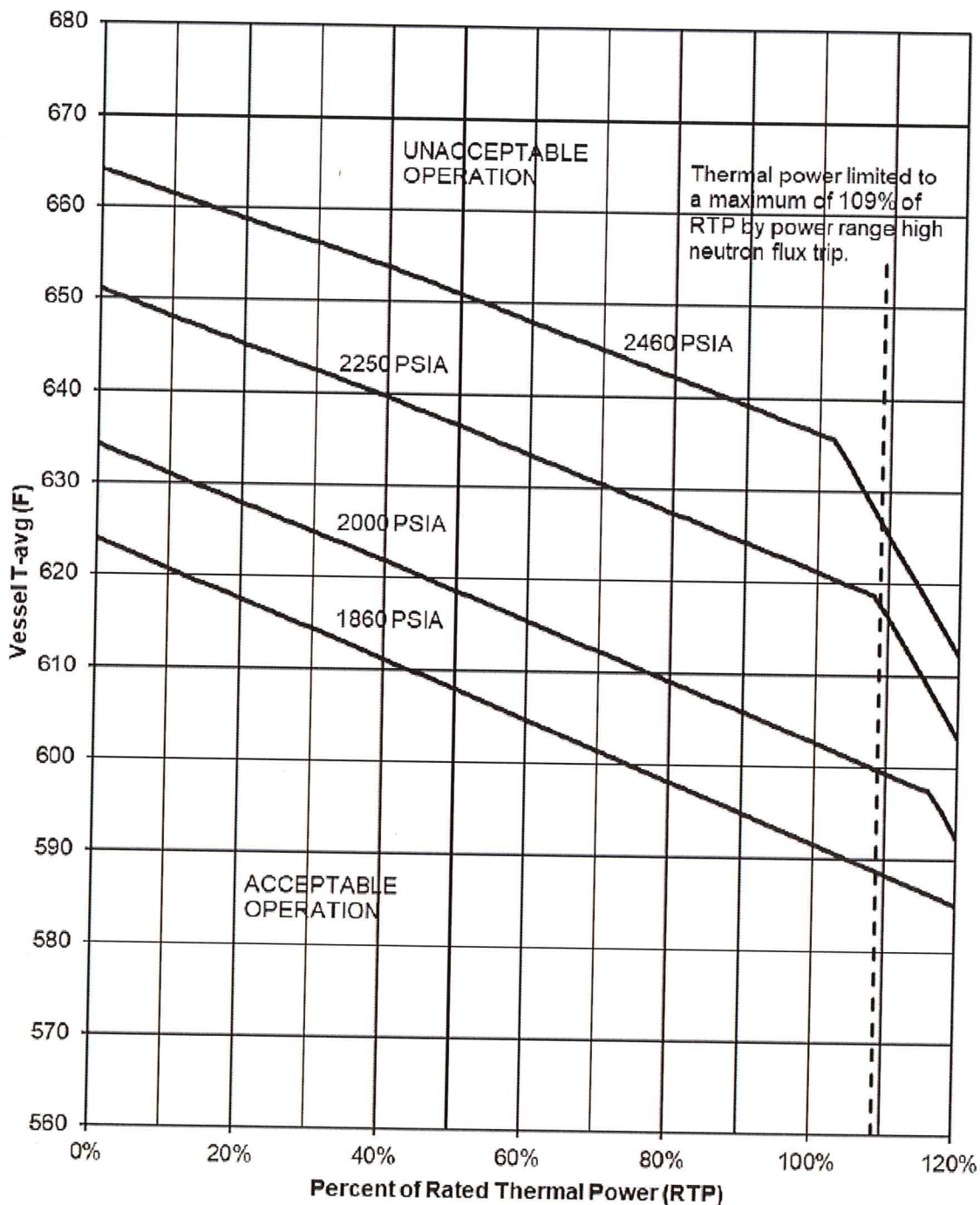


Figure 2.1.1-1
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(continued)

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 11. WCAP-18240-P-A, "Westinghouse Thermal Design Procedure."

(continued)

**Limitations and Conditions Compliance for WCAP-18482-NP-A, WCAP-14882-P-A,
WCAP-15306-NP-A, WCAP-15306-NP-A Addendum 2-NP-A, WCAP-17642-NP-A
Revision 1, and WCAP-18240-NP-A**

(Non-Proprietary)

WESTINGHOUSE NON-PROPRIETARY CLASS 3

Enclosure 3

**Limitations and Conditions Compliance for WCAP-18482-NP-A,
WCAP-14882-P-A, WCAP-15306-NP-A, WCAP-15306-NP-A Addendum
2-NP-A, WCAP-17642-NP-A Revision 1, and WCAP-18240-NP-A**

(Non-Proprietary)

(21 pages including this cover page)

October 2025

ADOPT™, ZIRLO®, and Optimized ZIRLO™ are trademarks or registered trademarks of Westinghouse Electric Company LLC, its affiliates and/or its subsidiaries in the United States of America and may be registered in other countries throughout the world. All rights reserved. Unauthorized use is strictly prohibited. Other names may be trademarks of their respective owners.

1.0 Compliance with NRC SER Limitations and Conditions on the Use of ADOPT Fuel (WCAP-18482-P-A)

The NRC Staff reviewed Westinghouse topical report WCAP-18482-P-A, "Westinghouse Advanced Doped Pellet Technology (ADOPT™) Fuel," and concluded in a Staff Safety Evaluation Report (SER) that the generic topical report was acceptable for licensing applications, subject to the limitations and conditions (L&Cs) identified in the SER being addressed by the licensees. These L&Cs in the SER were considered in the safety analyses for the Diablo Canyon Power Plant Units 1 and 2 (DCPP). The application of ADOPT fuel for DCPP is compliant with the three general L&Cs (Methodology, Reactor and Cladding types, and Fuel Limitations) as addressed below. Note that the three general areas of the L&Cs have been broken into ten separate L&Cs.

1.1 WCAP-18482-P-A SER Limitation and Condition 1

Licensees must demonstrate that the CRE analytical models, methods, and acceptance criteria are applicable to fuel designs containing ADOPT fuel pellets and capture all relevant fuel burnup and cladding corrosion related phenomena.

Compliance:

Methodology from WCAP-15806-P-A (Reference 2) was used for the DCPP control rod ejection (CRE) analysis with ADOPT fuel. Regulatory Guide 1.236 (Reference 3) was followed for the generation of CRE acceptance criteria with regards to ADOPT fuel pellets relating to all fuel burnup and cladding corrosion related phenomena using ADOPT burnup dependent limit values from WCAP-18482-P-A (Reference 1).

1.2 WCAP-18482-P-A SER Limitation and Condition 2

ADOPT fuel must be used with the NRC-approved Westinghouse and CE PWR designs.

Compliance:

DCPP is a licensed Westinghouse PWR design per Reference 4.

1.3 WCAP-18482-P-A SER Limitation and Condition 3

ADOPT fuel must be used with the NRC-approved Westinghouse and CE fuel designs with corresponding pellet and assembly dimensions.

Compliance:

ADOPT fuel will replace standard uranium dioxide (UO₂) pellets used with the Westinghouse fuel design described in Enclosure 1. There are no changes to the corresponding pellet and assembly dimensions as compared to the existing licensed fuel design. The current 17x17 Optimized Fuel Assembly (OFA) fuel was licensed for DCPD in Reference 7.

1.4 WCAP-18482-P-A SER Limitation and Condition 4

ADOPT fuel shall be used with the NRC-approved zirconium based cladding materials, such as ZIRLO[®] and Optimized ZIRLO[™].

Compliance:

ADOPT fuel will be used with Optimized ZIRLO cladding material, which is approved for licensing applications in WCAP-12610-P-A. (Reference 5).

1.5 WCAP-18482-P-A SER Limitation and Condition 5

ADOPT fuel may be used with or without annular pellets and application of ZrB₂ integral fuel burnable absorber (IFBA) coating but must be used consistent with the defined IFBA parameters in applicable NRC-approved fuel performance or product TRs.

Compliance:

ADOPT fuel will be used with annular blankets and the application of IFBA coating consistent with Reference 1.

1.6 WCAP-18482-P-A SER Limitation and Condition 6

Fuel burnup shall be limited to 62 GWd/MTU peak rod average for all cladding types.

Compliance:

ADOPT fuel will operate within burnup levels approved in the topical report.

1.7 WCAP-18482-P-A SER Limitation and Condition 7

Nominal pellet density range will be [].

Compliance:

The ADOPT pellet density requirement, []^{a,c}, is specified on the Westinghouse pellet drawing and is consistent with Reference 1. The acceptance requirement, as identified in the ADOPT pellet specification for a pellet lot is 95% confidence that 95% of lot is within the tolerance limit specified in the drawing.

1.8 WCAP-18482-P-A SER Limitation and Condition 8

Fuel grain size range will be [] as measured according to ASTM E112 as linear intercept without correction factor, which corresponds to [] with correction.

Compliance:

The ADOPT fuel grain size range requirement, []^{a,c}, is identified in the Westinghouse ADOPT pellet specification and is consistent with Reference 1. The grain size is measured by the ASTM E112 (Reference 6) linear intercept method without correction factor, and the average grain size is used as a product acceptance criterion for all pellets.

1.9 WCAP-18482-P-A SER Limitation and Condition 9

Cr range from [] which corresponds to inclusion of
 Cr_2O_3 ranging from [].

Compliance:

The chromium content requirement, []^{a,c}, is identified in the Westinghouse ADOPT pellet specification and is consistent with Reference 1.

1.10 WCAP-18482-P-A SER Limitation and Condition 10

Al ranging from [] which corresponds to inclusion of Al_2O_3
ranging from [].

Compliance:

The aluminum content requirement, []^{a,c}, is identified in the Westinghouse ADOPT pellet specification and is consistent with Reference 1.

1.11 References

1. WCAP-18482-P-A, "Westinghouse Advanced Doped Pellet Technology (ADOPT™) Fuel," September 2022.
2. WCAP-15806-P-A, "Westinghouse Control Rod Ejection Accident Analysis Methodology Using Multi-Dimensional Kinetics," November 2003.
3. U.S. NRC Regulatory Guide 1.236, "Pressurized-Water Reactor Control Rod Ejection and Boiling-Water Reactor Control Rod Drop Accidents," June 2020.

4. Operating License Number DPR-80 and DPR-82 for the Diablo Nuclear Power Plants Units 1 and 2, respectively, "Facility Operating License," ML053140349 and ML053140353.
5. WCAP-12610-P-A & CENPD-404-P-A, Addendum 1-A, "Optimized ZIRLO™," July 2006.
6. ASTM E112, "Standard Test Methods for Determining Average Grain Size."
7. Letter from H. Rood (NRC) to J.D. Shiffer (PG&E), "License Amendments 37 & 36, Amendments Revise TS for Diablo Canyon to Permit Core Reload & Operation with Westinghouse's 17x17 VANTAGE 5 Fuel Assemblies," (ML022330340).