

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Application of SOUTHERN CALIFORNIA)	
EDISON COMPANY, ET AL. for a Class)	Docket No. 50-362
103 License to Acquire, Possess,)	
and Use a Utilization Facility as)	Amendment Application
Part of Unit No. 2 of the San)	No. 129
Onofre Nuclear Generating Station)	

SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. pursuant to 10 CFR 50.90, hereby submit Amendment Application No. 129.

This amendment application consists of Proposed Change Number (PCN) NPF-15-442 to Facility Operating License No. NPF-15. PCN NPF-15-442 is a request to revise the San Onofre Unit 3 Linear Heat Rate (LHR) limit in Technical Specification (TS) 3/4.2.1, "Linear Heat Rate," and the associated Bases. This request will reduce the LHR limit from 13.9 kilowatts per foot (kw/ft) to 13.0 kw/ft.

Subscribed on this 16th day of September, 1994.

Respectfully submitted,

SOUTHERN CALIFORNIA EDISON COMPANY

By:

Richard M. Rosenblum
Richard M. Rosenblum
Vice President
Engineering and Technical Services

State of California

County of Orange

On 9/16/94 before me, Mariane Sanchez, personally
appeared Richard M. Rosenblum personally known to me to be the person whose name is
subscribed to the within instrument and acknowledged to me that he executed the same in his
authorized capacity, and that by his signature on the instrument the person, or the
entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Signature

Mariane Sanchez



ENCLOSURE 1

DESCRIPTION AND SAFETY ANALYSIS
OF PROPOSED CHANGE NPF-10/15-442

**DESCRIPTION AND SAFETY ANALYSIS
OF PROPOSED CHANGE NPF-10/15-442**

This is a request to revise Technical Specification (TS) 3/4.2.1, "Linear Heat Rate," for San Onofre Units 2 and 3. The Bases of TS 3/4.2.1, "Linear Heat Rate," will also be revised.

Units 2 and 3 Technical Specifications

Existing Specifications:

Unit 2: See Attachment "A"

Unit 3: See Attachment "B"

Proposed Specifications:

Unit 2: See Attachment "C"

Unit 3: See Attachment "D"

1.0 DESCRIPTION OF CHANGES:

This amendment request is to change the Technical Specification (TS) 3/4.2.1, "Linear Heat Rate," Linear Heat Rate (LHR) limit. TS 3/4.2.1 requires maintaining the linear heat rate at or below 13.9 kilowatts per linear foot (kw/ft) for steady state operation. This amendment request is to revise this value from 13.9 kw/ft to 13.0 kw/ft. The Bases of TS 3/4.2.1, "Linear Heat Rate," are also being revised to reflect the new value.

2.0 BACKGROUND:

2.1 Technical Specification

TS 3/4.2.1 requires the LHR to be limited to 13.9 kw/ft or less during steady state operations to insure that, in the event of a Large Break Loss of Coolant Accident (LBLOCA), the peak temperature of the fuel cladding will not exceed 2200 °F. The LHR limit specified in TS 3/4.2.1 is monitored by the Core Operating Limit Supervisory System (COLSS) and the Core Protection Calculators (CPCs) when COLSS is out of service during plant operation. The CPCs ensure the overall safety of the reactor is maintained by using reactor trip functions to limit the maximum reactor power and the local power density. COLSS is a non-safety related monitoring system which alerts operators when certain reactor parameters, including LHR, exceed limiting conditions for operation values.

2.2 Linear Heat Rate

TS 3/4.2.1 provides assurance that the LBLOCA event will be bounded for energy transfer from the reactor core by placing a

limit on the steady state LHR. This energy transfer between the individual fuel pins in the core and the reactor coolant is measured in kilowatts per linear foot of fuel pin (kw/ft) and is called the Linear Heat Rate.

3.0 DISCUSSION:

3.1 Basis for the Proposed Reduction of the Linear Heat Rate (LHR) Limit

The LHR limit of TS 3/4.2.1 is to be changed from 13.9 kw/ft to 13.0 kw/ft. This change is conservative and supports a new LBLOCA reanalysis. The LBLOCA reanalysis was performed to restore and provide additional analysis margin for recent changes in analysis input parameters. The input parameter changes include 1) changes in physics parameters and assumptions used in support of an optimized fuel loading pattern, and 2) changes to accommodate future plant design and operational changes. These changes and the LBLOCA reanalysis are described below.

1. Optimized Fuel Loading Pattern

By reducing the core neutron leakage a longer fuel cycle length can be achieved. The improved fuel cycle length, however, affects the analysis for the LBLOCA due to more adverse radial power peaking factors at beginning of core life (BOL). The more adverse BOL radial peaking factors result in an increase in the evaluated Peak Cladding Temperature (PCT). The evaluated PCT margin is increased by lowering the LHR limit as proposed in this amendment request.

2. Future Plant Design and Operational Changes

Various parameters in the LBLOCA reanalysis have been revised to accommodate anticipated changes in plant design and operation. Examples of these changes include: 1) expected increases in steam generator tube plugging level and 2) anticipated reductions in reactor vessel inlet temperature. The proposed reduction in LHR limit provides additional analysis margin to accommodate these and other anticipated plant changes.

3. LBLOCA Reanalysis

A reduction in the LHR limit provides an increase in PCT margin for the LBLOCA Analysis of Record (AOR). Reducing the allowable LHR limit results in a reduction in the maximum allowable steady-state energy transfer from the reactor core to the reactor coolant. By reducing the limit on local energy transfer to the coolant the maximum heat rate assumed in the analysis will be reduced. This, in

turn, reduces the heat-up of the fuel should the fuel be uncovered by coolant and reduces the PCT.

The reanalysis of the LBLOCA was performed using the Asea Brown Boveri - Combustion Engineering 1985 LBLOCA Evaluation Model (EM). This EM was used for San Onofre without change to the standard methodology as previously reported to the NRC. Results of the LBLOCA reanalysis show that all acceptance criteria were met with the LHR limit reduced from the present limit of 13.9 kw/ft to 13.0 kw/ft. The PCT calculated by the reanalysis was 2160 °F, which is within the required limit of 2200 °F.

3.2 Acceptability of the Proposed Reduction of the LHR Limit

The LHR limit is being reduced to provide margin in the LBLOCA reanalysis performed in support of an optimized fuel loading pattern. This reduction is possible because recent investigations performed by Southern California Edison (Edison) found that the normal maximum LHR value, including all applicable uncertainties, is approximately 12.0 kw/ft. On this basis, Edison determined that Units 2 and 3 may be operated at a lower LHR limit of 13.0 kw/ft without affecting unit performance.

Normal operation of the plant is monitored by the COLSS and CPCs. If the LHR limit is exceeded, the COLSS operating alarm sounds to warn the operator of the need to return the LHR to within the Limiting Condition for Operation limit. To ensure minimal operational impact, sufficient analysis margin between the normal maximum LHR and the proposed TS LHR limit should be maintained. The difference between the proposed TS LHR limit of 13.0 kw/ft and the normal maximum LHR of 12.0 kw/ft is sufficient to ensure that this proposed TS change has minimal operational impact.

Unit operation with COLSS out of service requires operator action to implement TS 3/4.2.4, "Power Distribution Limits - DNBR Margin," Figure 3.2-2, "DNBR Operating Limit Based on Core Protection Calculator - COLSS Out of Service - Both CEACS [Control Element Assembly Calculators] Inoperable." Operator ability to operate when COLSS is out of service within the "Region of Acceptable Operation" shown on Figure 3.2-2 will not be impacted by the proposed reduction in LHR limit.

4.0 DISCUSSION OF CHANGES TO PCN-299:

PCN-299 implements the Technical Specification Improvement Project which incorporates the recommendations of NUREG-1432, "Standard Technical Specifications Combustion Engineering Plants." PCN-299 was submitted to the NRC for review on December 30, 1993. This proposed change does not require any changes to PCN-299 because the LHR limit is being transferred to the Core Operating Limit Report.

5.0 SAFETY ANALYSIS:

The proposed change described above shall be deemed to involve a significant hazards consideration if there is a positive finding in any one of the following areas:

1. Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequences of any accident previously evaluated?

Response: No

The only event impacted by this Technical Specification (TS) change is the Large Break Loss of Coolant Accident (LBLOCA) which has been reanalyzed. There is a direct correlation between the magnitude of the TS 3/4.2.1 Linear Heat Rate (LHR) limit and the calculated peak cladding temperature (PCT). Since the LHR is being reduced in value, which is a conservative change, there will be no increase in the consequences of the event. The LBLOCA reanalysis, performed using the new LHR limit in support of an optimized fuel loading pattern, resulted in a reduction of the calculated LBLOCA PCT. Therefore, this change will not involve an increase in the probability or consequences of any accident previously evaluated.

2. Will operation of the facility in accordance with this proposed change create the possibility of a new or different kind of accident from any previously evaluated?

Response: No

This amendment request does not involve any change to plant equipment or operation. The linear heat rate limit provided in T/S 3.2.1 is used only in the LBLOCA analysis. No change to the LBLOCA methodology was made. Therefore, this change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Will operation of the facility in accordance with this proposed change involve a significant reduction in a margin of safety?

Response: No

This amendment does not change the manner in which safety limits, limiting safety settings, or limiting conditions for operation are determined. There is no change in the PCT acceptance criterion for this event as a result of the proposed reduction in the LHR limit. Therefore, there is no reduction in the margin of safety from the acceptance limit to the mechanical failure point of the fuel. Additionally, the analysis value for the LBLOCA PCT is reduced to 2160 °F. This results in an increase in the analysis

margin between the acceptance criterion and the analysis value. Therefore, this proposed change does not involve a reduction in a margin of safety.

6.0 SAFETY AND SIGNIFICANT HAZARDS DETERMINATION:

Based on the above Safety Analysis, it is concluded that: (1) the proposed change does not constitute a significant hazards consideration as defined by 10 CFR 50.92; and (2) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed change. Moreover, because this action does not involve a significant hazards consideration, it will also not result in a condition which significantly alters the impact of the station on the environment as described in the NRC Final Environmental Statement.