

March 21, 1988

Docket No. 50-382

Mr. J. G. Dewease  
Senior Vice President - Nuclear Operations  
Louisiana Power and Light Company  
317 Baronne Street, Mail Unit 17  
New Orleans, Louisiana 70112

DISTRIBUTION:

Docket File	Wanda Jones
NRC PDR	EJordan
Local PDR	JPartlow
PD4 Reading	ARM/LFMB
DHagan	GPA/PA
PNoonan (3)	OGC-Bethesda
DWigginton	EButcher
JCalvo	ACRS (10)
TBarnhart (4)	Plant File
W. Hodges	

Dear Mr. Dewease:

SUBJECT: ISSUANCE OF AMENDMENT NO. 32 TO FACILITY OPERATING LICENSE  
NPF-38 - WATERFORD STEAM ELECTRIC STATION, UNIT 3  
(TAC NO. 66414)

The Commission has issued the enclosed Amendment No. 32 to Facility Operating License No. NPF-38 for the Waterford Steam Electric Station, Unit 3. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated October 8, 1987.

The amendment changes the Appendix A Technical Specifications by revising the time limits for monitoring linear heat rate and departure from nucleate boiling ratio using the core protection calculators when the core operating limit supervisory system is inoperable.

A copy of the Safety Evaluation supporting the amendment is also enclosed. Notice of Issuance will be included in the Commission's next Bi-weekly Federal Register notice.

Sincerely,

/s/

David L. Wigginton, Project Manager  
Project Directorate - IV  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 32 to NPF-38
2. Safety Evaluation

cc w/enclosures:  
See next page

LTR NAME: WATERFORD 3 AMENDMENT NO. 68

PD4/LA *PH*  
PNoonan  
01/19/88

PD4/PM *JW*  
JWilson DWigginton:sr  
01/19/88

SRXB *MM*  
WHodges  
01/20/88

*OGC*  
*R. Bachmann*  
02/10/88

PD4/D *MC*  
JCalvo  
~~02/11/88~~  
03/21/88

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PDR ADDCK 05000382  
P PDR

March 21, 1988

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Senior Vice President - Nuclear Operations  
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Sincerely,

/s/

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Project Directorate - IV  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

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JWilson/DWigginton: sr  
01/19/88

SRXB *[Signature]*  
WHodges  
01/20/88

*[Signature]*  
OGC  
K. Oachmann  
03/10/88

PD4/D *[Signature]*  
JCalvo  
03/21/88



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555  
March 21, 1988

Docket No. 50-382

Mr. J. G. Dewease  
Senior Vice President - Nuclear Operations  
Louisiana Power and Light Company  
317 Baronne Street, Mail Unit 17  
New Orleans, Louisiana 70112

Dear Mr. Dewease:

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(TAC NO. 66414)

The Commission has issued the enclosed Amendment No. <sup>32</sup> to Facility Operating License No. NPF-38 for the Waterford Steam Electric Station, Unit 3. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated October 8, 1987.

The amendment changes the Appendix A Technical Specifications by revising the time limits for monitoring linear heat rate and departure from nucleate boiling ratio using the core protection calculators when the core operating limit supervisory system is inoperable.

A copy of the Safety Evaluation supporting the amendment is also enclosed. Notice of Issuance will be included in the Commission's next Bi-weekly Federal Register notice.

Sincerely,

A handwritten signature in dark ink, appearing to read "D. L. Wigginton".

David L. Wigginton, Project Manager  
Project Directorate - IV  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 32 to NPF-38
2. Safety Evaluation

cc w/enclosures:  
See next page

Mr. Jerrold G. Dewease  
Louisiana Power & Light Company

Waterford 3

cc:

W. Malcolm Stevenson, Esq.  
Monroe & Leman  
1432 Whitney Building  
New Orleans, Louisiana 70103

Mr. E. Blake  
Shaw, Pittman, Potts & Trowbridge  
2300 N Street, NW  
Washington, D.C. 20037

Resident Inspector/Waterford NPS  
Post Office Box 822  
Killona, Louisiana 70066

Mr. Ralph T. Lally  
Manager of Quality Assurance  
Middle South Services, Inc.  
Post Office Box 61000  
New Orleans, Louisiana 70161

Chairman  
Louisiana Public Service Commission  
One American Place, Suite 1630  
Baton Rouge, Louisiana 70825-1697

Mr. K. W. Cook  
Nuclear Safety and Regulatory Affairs Manager  
Louisiana Power & Light Company  
317 Baronne Street  
New Orleans, Louisiana 70112

Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
Office of Executive Director for  
Operations  
611 Ryan Plaza Drive, Suite 1000  
Arlington, Texas 76011

Mr. William H. Spell, Administrator  
Nuclear Energy Division  
Office of Environmental Affairs  
Post Office Box 14690  
Baton Rouge, Louisiana 70898

President, Police Jury  
St. Charles Parish  
Hahnville, Louisiana 70057



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

LOUISIANA POWER AND LIGHT COMPANY

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 32  
License No. NPF-38

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Louisiana Power and Light Company (the licensee) dated October 8, 1987, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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P PDR

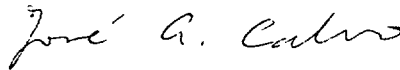
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-38 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 32 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Jose A. Calvo, Director  
Project Directorate - IV  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 21, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 32  
TO FACILITY OPERATING LICENSE NO. NPF-38  
DOCKET NO. 50-382

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

Remove

3/4 2-1  
-  
3/4 2-2  
3/4 2-6  
-

Insert

3/4 2-1  
3/4 2-1a  
3/4 2-2 (No change)  
3/4 2-6  
3/4 2-6a

### 3/4.2 POWER DISTRIBUTION LIMITS

#### 3/4 2.1 LINEAR HEAT RATE

#### LIMITING CONDITION FOR OPERATION

---

3.2.1 The linear heat rate limit (of Figure 3.2-1) shall be maintained by one of the following methods as applicable:

- a. Maintaining COLSS calculated core power less than or equal to COLSS calculated core power operating limit based on linear heat rate (when COLSS is in service); or
- b. Operating within the region of acceptable operation of Figure 3.2-1a using any operable CPC channel (when COLSS is out of service).

APPLICABILITY: MODE 1 above 20% of RATED THERMAL POWER.

#### ACTION:

- a. With the linear heat rate limit not being maintained as indicated by COLSS calculated core power exceeding the COLSS calculated core power operating limit based on linear heat rate, within 15 minutes initiate corrective action to reduce the linear heat rate to within the limit and either:
  1. Restore the linear heat rate to within its limits within 1 hour, or
  2. Reduce THERMAL POWER to less than or equal to 20% of RATED THERMAL POWER within the next 6 hours.
- b. With the linear heat rate limit not being maintained as indicated by operation outside the region of acceptable operation in Figure 3.2-1a with COLSS out of service, either:
  1. Restore COLSS to service within 2 hours, or
  2. Restore the linear heat rate to within its limits within the next 2 hours, or
  3. Reduce THERMAL POWER to less than or equal to 20% of RATED THERMAL POWER within the next 6 hours.

#### SURVEILLANCE REQUIREMENTS

---

4.2.1.1 The provisions of Specification 4.0.4 are not applicable.

4.2.1.2 The linear heat rate shall be determined to be within its limits when THERMAL POWER is above 20% of RATED THERMAL POWER by continuously monitoring the core power distribution with the Core Operating Limit Supervisory System



## POWER DISTRIBUTION LIMITS

### LIMITING CONDITION FOR OPERATION

---

(COLSS) or, with the COLSS out of service, by verifying at least once per 2 hours that the linear heat rate, as indicated on any OPERABLE Local Power Density channel, is within the limits shown on Figure 3.2-1a.

4.2.1.3 At least once per 31 days, the COLSS Margin Alarm shall be verified to actuate at a THERMAL POWER level less than or equal to the core power operating limit based on kW/ft.

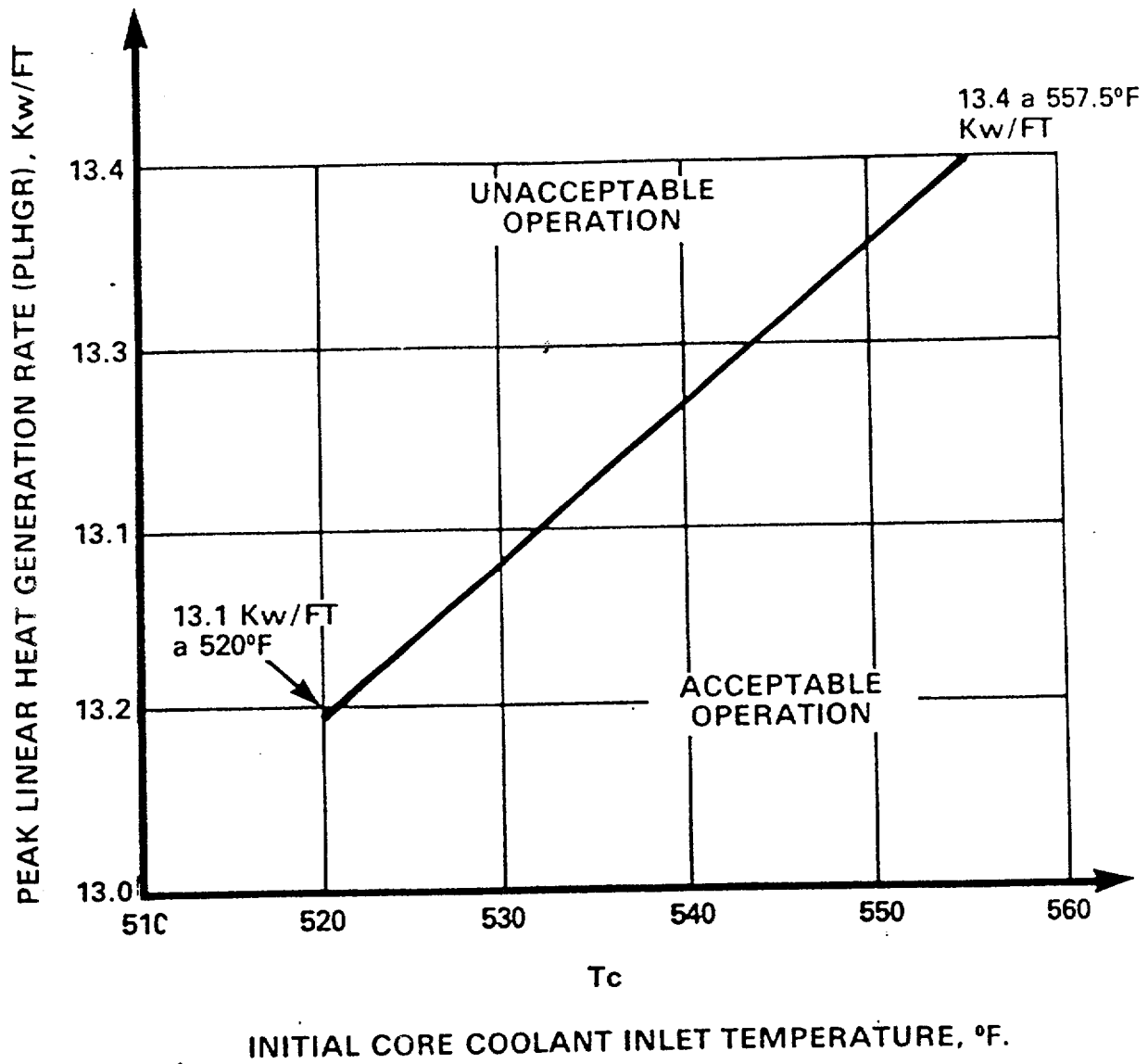


FIGURE 3.2-1

ALLOWABLE PEAK LINEAR HEAT RATE VS Tc

## POWER DISTRIBUTION LIMITS

### SURVEILLANCE REQUIREMENTS

---

4.2.3.1 The provisions of Specification 4.0.4 are not applicable.

4.2.3.2 The AZIMUTHAL POWER TILT shall be determined to be within the limit above 20% of RATED THERMAL POWER by:

- a. Continuously monitoring the tilt with COLSS when the COLSS is OPERABLE.
- b. Calculating the tilt at least once per 12 hours when the COLSS is inoperable.
- c. Verifying at least once per 31 days, that the COLSS Azimuthal Tilt Alarm is actuated at an AZIMUTHAL POWER TILT greater than the AZIMUTHAL POWER TILT Allowance used in the CPCs.
- d. Using the incore detectors at least once per 31 days to independently confirm the validity of the COLSS calculated AZIMUTHAL POWER TILT.

## POWER DISTRIBUTION LIMITS

### 3/4.2.4 DNBR MARGIN

#### LIMITING CONDITION FOR OPERATION

---

3.2.4 The DNBR margin shall be maintained by one of the following methods:

- a. Maintaining COLSS calculated core power less than or equal to COLSS calculated core power operating limit based on DNBR (when COLSS is in service, and either one or both CEACs are operable); or
- b. Maintaining COLSS calculated core power less than or equal to COLSS calculated core power operating limit based on DNBR decreased by 13% RATED THERMAL POWER (when COLSS is in service and neither CEAC is operable); or
- c. Operating within the region of acceptable operation of Figure 3.2-2 using any operable CPC channel (when COLSS is out of service and either one or both CEACs are operable); or
- d. Operating within the region of acceptable operation of Figure 3.2-3 using any operable CPC channel (when COLSS is out of service and neither CEAC is operable).

APPLICABILITY: MODE 1 above 20% of RATED THERMAL POWER.

#### ACTION:

- a. With the DNBR limit not being maintained as indicated by COLSS calculated core power exceeding the COLSS calculated core power operating limit based on DNBR, within 15 minutes initiate corrective action to reduce the DNBR to within the limits and either:
  1. Restore the DNBR to within its limits within 1 hour, or
  2. Reduce THERMAL POWER to less than or equal to 20% of RATED THERMAL POWER within the next 6 hours.
- b. With the DNBR limit not being maintained as indicated by operation outside the region of acceptable operation in Figure 3.2-2 or 3.2-3 with COLSS out of service, either:
  1. Restore COLSS to service within 2 hours, or
  2. Restore the DNBR to within its limits within the next 2 hours, or
  3. Reduce THERMAL POWER to less than or equal to 20% of RATED THERMAL POWER within the next 6 hours.

## POWER DISTRIBUTION LIMITS

### SURVEILLANCE REQUIREMENTS

---

4.2.4.1 The provisions of Specification 4.0.4 are not applicable.

4.2.4.2 The DNBR shall be determined to be within its limits when THERMAL POWER is above 20% of RATED THERMAL POWER by continuously monitoring the core power distribution with the Core Operating Limit Supervisory System (COLSS) or, with the COLSS out of service, by verifying at least once per 2 hours that the DNBR, as indicated on any OPERABLE DNBR channel, is within the limit shown on Figure 3.2-2 or Figure 3.2-3.

4.2.4.3 At least once per 31 days, the COLSS Margin Alarm shall be verified to actuate at a THERMAL POWER level less than or equal to the core power operating limit based on DNBR.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 32 TO

FACILITY OPERATING LICENSE NO. NPF-38

LOUISIANA POWER AND LIGHT COMPANY

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO. 50-382

1.0 INTRODUCTION

By application dated October 8, 1987, Louisiana Power and Light Company (LP&L or the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License No. NPF-38) for Waterford Steam Electric Station, Unit 3. The proposed changes would revise the Action requirements for exceeding a Core Protection Calculators (CPCs) calculated operating limit in Technical Specifications 3.2.1 and 3.2.4.

2.0 DISCUSSION

Presently, if core operating limit supervisory system (COLSS) is out of service, Technical Specification 3.2.1, Linear Heat Rate (LHR), and Technical Specification 3.2.4, Departure from Nucleate Boiling Ratio (DNBR) Margin, requires that LHR and DNBR must be maintained within a more restrictive set of limits based on the CPCs. With the limits not being maintained, corrective action must be initiated within 15 minutes to restore LHR and DNBR to within the applicable set of limits within 1 hour or the plant must be in at least Hot Standby within the next 6 hours.

With COLSS out of service, the proposed changes will replace the current 15 minute time limit for initiating corrective action with a requirement to return COLSS to service within 2 hours. The time allowed for restoration of the DNBR and LHR limits would then increase from 1 hour to 2 hours. If the DNBR and LHR limits are not restored within the proposed 2 hours, the proposed changes would require reactor power to be reduced to less than or equal to 20% of Rated Thermal Power within the next 6 hours.

3.0 EVALUATION

The intent of Technical Specifications 3.2.1 and 3.2.4 is to maintain the reactor within the range of initial conditions that was assumed in the licensee's Safety Analysis. Maintaining the LHR within the specified range ensures that in the event of a LOCA, the fuel cladding temperature will not exceed 2200°F limit imposed by 10 CFR 50.46. Maintaining the DNBR within the specified range will ensure that no postulated accident will result in consequences more severe than those described in Chapter 15 of the licensee's Final Safety Analysis Report.

The primary consideration in extending the COLSS out of service time limit is the remote possibility of a slow, undetectable transient that degrades the LHR and/or DNBR slowly over the 2 hour period and is then followed by an anticipated operational occurrence or an accident. Upon approval of the proposed change the licensee will increase the monitoring frequency of the CPC-calculated values of LHR and DNBR. Currently, immediately following the loss of COLSS and every 2 hours thereafter, the licensee records (among other things) the CPC-calculated values of LHR and DNBR. Following approval of the proposed change, the licensee will increase the monitoring frequency for LHR and DNBR from once every 2 hours to once every 15 minutes. Moreover, the licensee is currently working to define a maximum allowable change in the CPC-calculated LHR or DNBR such that further degradation will require the operators to take immediate action to reduce reactor power and comply with the appropriate COLSS out of service Technical Specification limits. Implementation of this change will provide additional assurance that potential reductions in core thermal margin will be quickly detected and, should it prove necessary, result in a decrease in reactor power and subsequent compliance with the existing COLSS out of service Technical Specification limits. The maximum reduction in power is appropriately proposed to 20% of Rated Thermal Power to coincide with the requirements for determining the linear heat rate and departure from nucleate boiling ratio only when the thermal power exceeds 20% (the applicability made for Specification 3/4 2.1).

The licensee has also proposed to extend the time allowed to return COLSS to operation from 1 hour to 2 hours. The frequency of CPC determinations of LHR and DNBR have been increased and with the operation maintained steady, the likelihood of exceeding the LHR and DNBR limits during the 2 hours is not increased but the likelihood of induced reactor transients from an early power reduction is reduced. Operation in the proposed manner is an acceptable balance between CPC determination and extending the period before power changes are required. The level of safety is maintained.

The proposed changes do not alter the current power operating limits nor do they involve any changes to COLSS or CPC software. The licensee will make no physical change to plant systems, structures or components nor will the proposed changes affect the ability of any of the safety-related equipment required to mitigate accidents. Therefore, for the reasons stated above, the staff concludes that the proposed changes to Technical Specifications 3.2.1 and 3.2.4 are acceptable.

#### 4.0 CONTACT WITH STATE OFFICIAL

The NRC staff has advised the Administrator, Nuclear Energy Division, Office of Environmental Affairs, State of Louisiana of the proposed determination of no significant hazards consideration. No comments were received.

## 5.0 ENVIRONMENTAL CONSIDERATION

The amendment relates to changes in installation or use of a facility component located within the restricted area as defined in 10 CFR 20 and changes surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such findings. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

## 6.0 CONCLUSION

Based upon its evaluation of the proposed changes to the Waterford 3 Technical Specifications, the staff has concluded that: there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and such activities will be conducted in compliance with the Commission's regulations and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. The staff, therefore, concludes that the proposed changes are acceptable, and are hereby incorporated into the Waterford 3 Technical Specifications.

Dated: March 21, 1988

Principal Contributor: J. Wilson