

September 10, 1996

Mr. Leon R. Eliason  
Chief Nuclear Officer & President-  
Nuclear Business Unit  
Public Service Electric & Gas  
Company  
Post Office Box 236  
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION (TAC NO. M94913)

Dear Mr. Eliason:

The Commission has issued the enclosed Amendment No. 96 to Facility Operating License No. NPF-57 for the Hope Creek Generating Station. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated March 6, 1996, as supplemented by letter dated May 30, 1996.

This amendment changes TS 3.8.1, "A.C. Sources - Operating," to decrease the minimum fuel oil storage capacity of the Emergency Diesel Generator Fuel Oil Storage Tanks, from 48,800 to 44,800 gallons. In addition, footnote \*\* is deleted from TS 3.8.1.1.b.2. The TS change also adds an Action Statement to address remedial action when a fuel oil transfer pump becomes inoperable.

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/s/

David H. Jaffe, Senior Project Manager  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-354

- Enclosures: 1. Amendment No. 96 to License No. NPF-57
- 2. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION

Docket File	JStolz	GHill(2)	LNicholson, RGN-I
PUBLIC	MO'Brien	JCalvo	
PDI-2 Reading	DJaffe	CGrimes	
SVarga	OGC	ACRS	

OFFICE	PDI-2/PA	PDI-2/PM	TSB #96-075	EELB/BC	OGC
NAME	MO'Brien	DJaffe	CGrimes	JCalvo	
DATE	7/9/96	7/10/96	7/21/96	1/96	9/4/96
OFFICE	PDI-2/DCP			SPLB	
NAME	JStolz			LMarsh	
DATE	9/6/96	1/96	1/96	8/29/96	

OFFICIAL RECORD COPY

DOCUMENT NAME: A:\HOPE CREEK\HC94913.AMD

9609170293 960910  
PDR ADOCK 05000354  
PDR

NRC FILE CENTER COPY



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

September 10, 1996

Mr. Leon R. Eliason  
Chief Nuclear Officer & President-  
Nuclear Business Unit  
Public Service Electric & Gas  
Company  
Post Office Box 236  
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION (TAC NO. M94913)

Dear Mr. Eliason:

The Commission has issued the enclosed Amendment No. 96 to Facility Operating License No. NPF-57 for the Hope Creek Generating Station. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated March 6, 1996, as supplemented by letter dated May 30, 1996.

This amendment changes TS 3.8.1, "A.C. Sources - Operating," to decrease the minimum fuel oil storage capacity of the Emergency Diesel Generator Fuel Oil Storage Tanks, from 48,800 to 44,800 gallons. In addition, footnote \*\* is deleted from TS 3.8.1.1.b.2. The TS change also adds an Action Statement to address remedial action when a fuel oil transfer pump becomes inoperable.

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Jaffe".

David H. Jaffe, Senior Project Manager  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-354

Enclosures: 1. Amendment No. 96 to  
License No. NPF-57  
2. Safety Evaluation

cc w/encls: See next page

Mr. Leon R. Eliason  
Public Service Electric & Gas  
Company

Hope Creek Generating Station

cc:

M. J. Wetterhahn, Esquire  
Winston & Strawn  
1400 L Street, N.W.  
Washington, DC 20005-3502

Ms. P. J. Curham  
MGR. Joint Generation Department  
Atlantic Electric Company  
Post Office Box 1500  
6801 Black Horse Pike  
Pleasantville, New Jersey 08232

R. Fryling, Jr., Esquire  
Law Department - Tower 5E  
80 Park Place  
Newark, New Jersey 07101

Richard Hartung  
Electric Service Evaluation  
Board of Regulatory Commissioners  
2 Gateway Center, Tenth Floor  
Newark, NJ 07102

Hope Creek Resident Inspector  
U.S. Nuclear Regulatory Commission  
Drawer 0509  
Hancocks Bridge, New Jersey 08038

Lower Alloways Creek Township  
c/o Mary O. Henderson, Clerk  
Municipal Building, P.O. Box 157  
Hancocks Bridge, NJ 08038

Mr. L. F. Storz  
Sr. V.P. - Nuclear Operations  
Nuclear Department  
P.O. Box 236  
Hancocks Bridge, New Jersey 08038

Mr. E. C. Simpson  
Sr. V.P. - Nuclear Engineering  
Nuclear Department  
P.O. Box 236  
Hancocks Bridge, New Jersey 08038

Mr. M. E. Reddemann  
General Manager - Hope Creek Operations  
Hope Creek Generating Station  
P.O. Box 236  
Hancocks Bridge, New Jersey 08038

Mr. D. R. Powell, Manager  
Licensing and Regulation  
Nuclear Business Unit  
P.O. Box 236  
Hancocks Bridge, New Jersey 08038

Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, Pennsylvania 19406

Dr. Jill Lipoti, Asst. Director  
Radiation Protection Programs  
NJ Department of Environmental  
Protection and Energy  
CN 415  
Trenton, New Jersey 08625-0415



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

PUBLIC SERVICE ELECTRIC & GAS COMPANY

ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-354

HOPE CREEK GENERATING STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 96  
License No. NPF-57

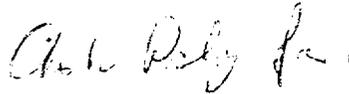
1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
  - A. The application for amendment filed by the Public Service Electric & Gas Company (PSE&G) dated March 6, 1996, as supplemented by letter dated May 30, 1996, complies with the standards and requirements of the Atomic 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 set forth in 10 CFR Chapter I;
  - 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.
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-57 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.96 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into the license. PSE&G shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 90 days.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stolz, Director  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications

Date of Issuance: September 10, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 96

FACILITY OPERATING LICENSE NO. NPF-57

DOCKET NO. 50-354

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 area of change.

Remove

Insert

3/4 8-1

3/4 8-1

3/4 8-3

3/4 8-3

3/4 8-11

3/4 8-11

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

A.C. SOURCES - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Four separate and independent diesel generators, each with:
  1. A separate fuel oil day tank containing a minimum of 360 gallons of fuel,
  2. A separate fuel storage system consisting of two storage tanks containing a minimum of 44,800 gallons of fuel, and
  3. A separate fuel transfer pump for each storage tank.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

- a. With one offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore the inoperable offsite circuit to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- b. With one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the above required A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. If the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 separately for each diesel generator within 16 hours\* unless the absence of any potential common mode failure for the remaining diesel generators is demonstrated. Restore the inoperable diesel generator to OPERABLE status within 72 hours for diesel generators A or B, or within 14 days for diesel generators C or D, or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- c. With one offsite circuit of the above required A.C. sources and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and

---

\* This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABILITY.

ELECTRICAL POWER SYSTEMS  
LIMITING CONDITION FOR OPERATION (Continued)

---

ACTION: (Continued)

A successful test(s) of diesel generator OPERABILITY per Surveillance Requirement 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 performed under this ACTION statement for the OPERABLE diesel generators satisfies the diesel generator test requirements of ACTION Statements a and b.

- f. With two diesel generators of the above required A.C. electrical power sources inoperable, in addition to ACTION e., above, verify within 2 hours that all required systems, subsystems, trains, components, and devices that depend on the remaining diesel generators as a source of emergency power are also OPERABLE; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- g. With one offsite circuit and two diesel generators of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter and demonstrate the OPERABILITY of the remaining diesel generators by performing Surveillance Requirements 4.8.1.1.2.a.4 and 4.8.1.1.2.a.5 separately for each diesel generator within 8 hours.\* Restore at least one of the above required inoperable A.C. sources to OPERABLE status within 2 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. Restore the inoperable offsite circuit and both of the inoperable diesel generators to OPERABLE status within 72 hours from time of initial loss or be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the following 24 hours.
- h. With the buried fuel oil transfer piping's cathodic protection system inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the system to OPERABLE status.
- i. With one fuel oil transfer pump inoperable, realign the flowpath of the affected tank to the tank with the remaining operable fuel oil transfer pump within 48 hours and restore the inoperable transfer pump to OPERABLE status within 14 days, otherwise declare the affected emergency diesel generator (EDG) inoperable. This variance may be applied to only one EDG at a time.

---

\* This test is required to be completed regardless of when the inoperable diesel generator is restored to OPERABILITY.

ELECTRICAL POWER SYSTEMS  
A.C. SOURCES - SHUTDOWN  
LIMITING CONDITION FOR OPERATION

---

---

3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Two diesel generators, one of which shall be diesel generator A or diesel generator B, each with:
  1. A separate fuel oil day tank containing a minimum of 360 gallons of fuel.
  2. A fuel storage system consisting of two storage tanks containing a minimum of 44,800 gallons of fuel.
  3. A separate fuel transfer pump for each storage tank.

APPLICABILITY: OPERATIONAL CONDITIONS 4, 5 and \*.

ACTION:

- a. With less than the above required A.C. electrical power sources OPERABLE, suspend CORE ALTERATIONS, handling of irradiated fuel in the secondary containment, operations with a potential for draining the reactor vessel and crane operations over the spent fuel storage pool when fuel assemblies are stored therein. In addition, when in OPERATIONAL CONDITION 5 with the water level less than 22'-2" above the reactor pressure vessel flange, immediately initiate corrective action to restore the required power sources to OPERABLE status as soon as practical.
- b. The provisions of Specification 3.0.3 are not applicable.
- c. With one fuel oil transfer pump inoperable, realign the flowpath of the affected tank to the tank with the remaining operable fuel oil transfer pump within 48 hours and restore the inoperable transfer pump to OPERABLE status within 14 days, otherwise declare the affected emergency diesel generator (EDG) inoperable. This variance may be applied to only one EDG at a time.

SURVEILLANCE REQUIREMENTS

---

---

4.8.1.2 At least the above required A.C. electrical power sources shall be demonstrated OPERABLE per Surveillance Requirements 4.8.1.1.1, 4.8.1.1.2, and 4.8.1.1.3, except for the requirement of 4.8.1.1.2.a.5.

---

\* When handling irradiated fuel in the secondary containment.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO.96 TO FACILITY OPERATING LICENSE NO. NPF-57

PUBLIC SERVICE ELECTRIC & GAS COMPANY

ATLANTIC CITY ELECTRIC COMPANY

HOPE CREEK GENERATING STATION

DOCKET NO. 50-354

1.0 INTRODUCTION

By letter dated March 6, 1996, as supplemented by letter dated May 30, 1996, the Public Service Electric & Gas Company (PSE&G or the licensee) submitted a request for changes to the Hope Creek Generating Station (HCGS), Technical Specification (TSs). This amendment would change TS 3.8.1, "A.C. Sources - Operating," to decrease the minimum fuel oil storage capacity of the Emergency Diesel Generator Fuel Oil Storage Tanks, from 48,800 to 44,800 gallons. In addition, footnote \*\* would be deleted in TS 3.8.1.1.b.2. The TS change would also add an Action Statement to address remedial action when a fuel oil transfer pump becomes inoperable.

2.0 DISCUSSION

The onsite, Class 1E AC power system, is described in Section 8.3.1.1.2 of the HCGS Updated Final Safety Analysis Report. The Hope Creek on-site, Class 1E AC power system incorporates four emergency diesel generators (EDGs) capable of providing electrical power to safety-related systems upon loss of off-site power. Each EDG is supplied with diesel fuel oil from two 26,500-gallon capacity storage tanks. Each of the two storage tanks has a dedicated fuel oil transfer pump for transferring fuel to the Day Tank of each EDG. Diesel fuel oil from the Day Tank is supplied directly to the EDG. Diesel fuel oil in the storage tanks is sufficient to support the EDGs, for at least 7 days (prior to off-site resupply), while supplying AC power to safety-related loads under loss-of-offsite power conditions. The 7-day fuel oil supply assumes that diesel fuel oil from an inoperable EDG will be transferred to the operating EDGs (see License Amendment No. 59 dated November 22, 1993). Requirements associated with the minimum diesel fuel oil inventory, and EDG equipment operability is contained in TS 3.8.1, "A.C. Sources - Operating."

The licensee has proposed three changes to TS 3.8.1. The first change would decrease the minimum required diesel fuel oil storage volume for each EDG from 48,800 to 44,800 gallons in TS 3.8.1.1, "A.C. Sources - Operating," and TS 3.8.1.2, "A.C. Sources - Shutdown." The licensee stated, in the March 6, 1996, application, that "...the small volume available between the high and low [storage tank] alarms, considering all instrument uncertainties,

requires frequent refilling of the storage tanks. The need to ensure complete [diesel fuel oil] sampling results are obtained before refilling a storage tank in conjunction with the frequent refillings places a burden on plant personnel and unnecessarily diverts resources."

With regard to the second proposed change, the licensee has proposed deletion of footnote \*\* of TS 3.8.1.1.b.2, which requires diesel fuel oil resupply within 48 hours when the stored volume is between 48,800 and 44,709 gallons. In their March 6, 1996, application, the licensee indicated that compliance with the 48-hour resupply TS requires that "...a fuel oil tanker truck is maintained on site at all times. This incurs a significant monthly charge for the tanker as well as requiring the use of several Operations personnel to manually transfer fuel from the tanker to the affected storage tank(s)."

The third proposed change to the TSs would add an Action Statement to TSs 3.8.1.1 and 3.8.1.2 to specify the remedial action to be taken when a diesel fuel oil transfer pump becomes inoperable. The proposed Action Statement is as follows:

With one fuel oil transfer pump inoperable, realign the flowpath of the affected tank to the tank with the remaining operable fuel oil transfer pump within 48 hours and restore the inoperable transfer pump to OPERABLE status within 14 days, otherwise declare the affected emergency diesel generator (EDG) inoperable. This variance may be applied to only one EDG at a time.

The current TSs do not address the inoperability of the diesel fuel oil transfer pumps.

### 3.0 EVALUATION

In reviewing the proposed decrease in the minimum required diesel fuel oil storage volume (the primary diesel fuel oil source) for each EDG from 48,800 to 44,800 gallons, the NRC staff requested the licensee to identify, and describe the use, of secondary and tertiary, on-site, diesel fuel oil sources. The licensee's May 30, 1996, supplement responded to the NRC staff's request for additional information. The licensee's response indicated that the secondary diesel fuel oil supply, obtained by transfer from the fuel oil storage tanks of another EDG, would be undertaken via a "hard pipe" cross-connect or by existing, prestaged equipment in a designated locker. The prestaged equipment is routinely inspected to assure its continued availability. In the safety evaluation supporting License Amendment No. 59, dated November 22, 1993, the NRC staff addressed the practice of transferring fuel oil, among the EDG fuel oil storage tanks. The NRC staff concluded that fuel oil transfer was acceptable to achieve at least 7 days of continuous EDG operation following a loss-of-coolant accident (LOCA).

The licensee's submittal also identified the following tertiary diesel fuel oil sources: (1) Approximately 400,000 gallons of #2 fuel oil that is qualified as ASTM 2D diesel fuel is located in an 800,000-gallon tank

near the Salem facility. Transfer of this fuel oil could be accomplished via an on-site tank truck. This tank truck is owned by the licensee and is distinct from the one that is subject to the significant charges noted above. (2) A volume of 250,000 to 1,000,000 gallons of #2 fuel oil is maintained in a 1,000,000-gallon tank adjacent to Hope Creek. A recent sample of this fuel oil confirmed that key parameters are within the bounds of ASTM 2D fuel oil. This supply could be transferred by installing fittings and using available hoses. In addition to the above sources, due to Hope Creek's location near refineries and storage facilities, resupply of diesel fuel oil to Hope Creek can be easily undertaken by truck or barge.

Based upon the information provided by the licensee, the NRC staff concludes that, the proposed fuel oil levels in the fuel oil storage tanks provide greater than a seven-day supply for continuous EDG operation following a LOCA when crediting fuel oil transfer among the fuel oil storage tanks per License Amendment No. 59. Moreover, the large quantities of additional fuel oil located on the Salem/Hope Creek site, allow for convenient replenishment of the fuel oil storage tanks if needed. Accordingly, the licensee's proposed decrease in the minimum required diesel fuel oil storage volume for each EDG from 48,800 to 44,800 gallons in TS 3.8.1.1 (A.C. Sources - Operating) and TS 3.8.1.2 (A.C. Sources - Shutdown) is acceptable. In addition, footnote \*\* of TS 3.8.1.1.b.2, which requires diesel fuel oil resupply (within 48 hours) when the stored volume is between 48,800 and 44,709 gallons, is unnecessary and can be deleted.

Finally, with regard to proposed Action Statement for the diesel fuel oil transfer pumps, the NRC staff notes that the diesel fuel oil storage and transfer system offers substantial redundancy in that each EDG is supplied by two storage tanks, each with its own transfer pump. The proposed Action Statement would allow the licensee 48 hours to realign the diesel fuel oil flowpath to compensate for an inoperable transfer pump. During the subject period, the EDG would still be operable in that diesel fuel oil could still be transferred to the day tank via the remaining, operable transfer pump. The NRC staff concludes that the proposed Action Statement is commensurate with the importance of the fuel oil transfer pumps, recognizes the degree of redundancy that is provided, and is acceptable.

#### 4.0 STATE CONSULTATION

By letter dated July 19, 1996, the State of New Jersey, Department of Environmental Protection, provided comments concerning the March 6, 1996, application for license amendment. The comments state that the licensee has proposed remedial action, in TS 3.8.1.1 and 3.8.1.2, that would require realignment of the EDG fuel oil source, within 7 days, upon determination that an EDG fuel oil transfer pump is inoperable. Further, since successful valve operation is required for the realignment, there should be assurance that such valve operation can be successfully accomplished (e.g., periodic "cycling" of the subject valves).

In response to the comments from the State of New Jersey, the NRC staff notes that the proposed TS changes further require that, should the realignment of the EDG fuel oil source be unsuccessful (e.g., a critical valve will not open or close), within 48 hours, the proposed TS requires that the associated EDG be declared inoperable. The NRC staff concludes that the proposed TS implicitly considers the operability of the valves that must be successfully operated to realign the EDG fuel oil sources. Accordingly, no changes in the proposed TS are needed.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC 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 the amendment involves no significant hazards consideration, and there has been no public comment on such finding (61 FR 34897). 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 the amendment.

#### 6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: D. H. Jaffe

Date: September 10, 1996