



Public Service Company of Colorado

16805 WCR 19 1/2, Platteville, Colorado 80651

March 30, 1984
Fort St. Vrain
Unit #1
P-84101

Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: NUREG-0737 Technical
Specification Changes
per Generic Letters
83-36 and 83-37

REFERENCES:

G-84080 (3-8-84, Johnson to Lee,
attached);
P-84046 (2-9-84, Warembourg to
Eisenhut);
P-83352 (10-28-83, Borst to
Madsen);
P-83416 (12-30-83, Lee to
Collins);
P-83403 (11-1-83, Generic Letter
83-37);
P-83401 (11-1-83, Generic Letter
83-36)

Dear Mr. Eisenhut:

We have reviewed the attached correspondence from E. H. Johnson requesting further consideration of the need for proposed changes to the FSV Technical Specifications for NUREG-0737 items described in Generic Letters 83-37 and 83-36.

We have completed the requested review, subject to clarifications of areas of staff concerns relayed to my staff in telephone discussions with Phil Wagner, the NRC Project Manager for FSV. Attachment 1 provides PSC response to the individual items of concern cited in P-84046 (attachment 2).


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Submittal of this response has been delayed two days due to delays encountered in transmittal of P-84046 to the cognizant site staff, as discussed with Phil Wagner. If you or your staff have questions with regard to this submittal, I may be contacted at (303)785-2224.

Very truly yours,


Don W. Warembourg
Manager, Nuclear Production

Attachments

cc: E. H. Johnson
P. C. Wagner

DWW/dkh

ATTACHMENT 1

- II.B.3 (Post-Accident Sampling)

In our response to Generic Letters 83-36 and 83-37 (P-84046, February 9, 1984) we indicated that we had previously committed (P-83352, October 28, 1983) to make modifications to the existing primary coolant sample system to accommodate the need to collect small sample volumes for high activity samples. Our anticipated completion date for these modifications is June 1, 1984. Additionally, we have committed to develop a procedure to estimate the extent of fuel damage based on primary coolant activity and related plant parameters. The estimated date of completion for this task is June 1, 1984, as well.

The existing FSV procedures currently maintain the elements described in the model Technical Specification, and these procedures are maintained in accordance with the Administrative Controls section of the Fort St. Vrain Technical Specifications. The existing Technical Specifications do not, however, specify the three elements identified in the model Technical Specification. As a result of the forementioned primary coolant sampling system modifications, procedure modifications, and additional training requirements imposed by these changes, we feel that we will be able to submit proposed changes to the FSV Technical Specifications specifying the maintenance of the identified program details by June 29, 1984.

- II.E.1.1 (Auxiliary Feedwater System Evaluation)

The auxiliary feedwater system is treated as a safety system in a pressurized water reactor (PWR), in order to meet the decay heat removal requirements of General Design Criterion 34 of Appendix A of 10CFR50 (see NUREG-0578, item 2.1.7a, page A-30). The concern of this item was to ensure that the auxiliary feedwater system (for a PWR) initiation time and capacity be such that, following a loss of feedwater flow, steam generator flows would remain adequate to provide sufficient heat transfer capability to remove stored and after-heat while preventing the opening of the primary coolant system relief and safety valves.

For FSV, the comparable system is the PCRV liner cooling system. The operability requirements for this system are addressed in LCO 4.2.13 of the FSV Technical Specifications. LCO 4.2.13 requires that "at least one heat exchanger and one pump shall be operating in each of the two PCRV liner cooling water loops during power operation." Corrective actions, if these conditions cannot be met are as follows:

- a) With only one complete operating loop (both heat exchangers and at least one pump in service), reactor power may be retained at rated power for up to 48 hours. If two loop operation cannot be restored within 48 hours, the reactor must be shutdown in an orderly manner.
- b) If one of the two heat exchangers in the single operating loop becomes inoperable, an orderly shutdown must be started immediately.

The model Technical Specifications require that, if one auxiliary feedwater pump is found to be inoperable, restore the required auxiliary feedwater pumps to operable status within 72 hours, or be in Hot Standby within the next 6 hours and in Hot Shutdown within the following 6 hours; with two auxiliary feedwater pumps inoperable, be in Hot Standby within 6 hours and in Hot Shutdown within the following 6 hours; and with three auxiliary feedwater pumps inoperable, immediately initiate corrective action to restore at least one to operability as soon as possible. We feel that LCO 4.2.13 is more conservative than the model Technical Specification in this regard.

Proposed modifications to surveillance requirement SR 5.2.24, submitted December 30, 1983 (P-83416) will require the following if accepted as submitted:

"Each reactor plant cooling water pump and the associated instruments and controls shall be functionally tested monthly. In addition, the instruments shall be calibrated, and the pump performance (flow and head) and mechanical condition (vibration amplitude and bearing temperature) shall be verified, annually or at the next scheduled plant shutdown if this was not performed during the previous year."

The PCRV liner cooling system and associated equipment are in continuous operation, and hence operability is always demonstrated. We feel that the proposed revision to SR 5.2.24 and the continuous operation of the equipment adequately address the concerns of the model Technical Specification.

In order to address the concerns expressed in G-84080, March 8, 1980, relative to the operability of safe shutdown cooling equipment (see attached Figure 10.3-4 from the FSV FSAR) the following summary of LCO's and Surveillances is provided:

- Storage Ponds - LCO 4.3.5 states that the reactor shall not be operated at power unless the inventory of the circulating water makeup storage ponds is at least 20 million gallons. SR 5.2.24 a) requires the circulating water makeup pond minimum inventory to be verified daily and the pond level instrumentation be functionally tested monthly and calibrated annually.
- Circulating Water Makeup Pumps and Pit - LCO 4.2.5 requires at least two circulating water makeup pumps connectible to the essential bus shall be operable during power operation. SR 5.2.25 b) states that the circulating water makeup pumps shall be functionally tested weekly. The pump controls and instrumentation including the fire water pits shall be functionally tested monthly and calibrated annually.
- Fire Pump Pits and Fire Water Pumps - LCO 4.2.6 states that the reactor shall not be operated at power unless the fire water system (including both fire water pump pits and both the motor and engine driven fire pumps) are operable. SR 5.2.24 b) requires the functional testing of the fire water pump pits monthly. SR 5.2.10 requires both the motor driven and engine driven fire pumps to be functionally tested monthly and calibrated annually.

In addition, SR 5.2.10 requires, once per refueling cycle, that it be verified that each fire water pump develops at least 1,500 gpm at a system head of 290 feet.

- Fire Water Booster Pumps - LCO 4.2.19 requires that there be one operable fire water booster pump during power operation. SR 5.2.23 requires that each fire water booster pump be tested annually by providing motive power to one helium circulator water turbine drive in conjunction with the performance of SR 5.2.7 (see Helium Circulators, below).
- Helium Circulators - LCO 4.2.1 requires that at least one circulator be operable in each loop during power operation. LCO 4.2.2 defines circulator operability as follows:
 - a) Emergency Feedwater and Fire Water are available to drive the water turbine and the capability for turbine water drainage exists. The Emergency Feedwater or Condensate Header may be inoperable for up to 24 hours without the helium circulators being considered inoperable.

- b) Normal Bearing water system is operable.
- c) The associated bearing water accumulator system is operable.
- d) Both bearing water makeup pumps are operable to provide required makeup. One of the bearing water makeup pumps may be inoperable for 24 hours without the helium circulators being considered inoperable.

SR 5.2.7 requires one circulator and the associated water supply valving in each loop to be functionally tested annually by operation on water turbine drive using feedwater, condensate, and boosted condensate (supplied to the fire water booster pumps at fire pump discharge pressure). SR 5.2.7 also requires both turbine water removal pumps and the turbine water removal tank overflow and their instrumentation and controls to the reactor building sump to be tested every three months. Their instrumentation and controls shall be calibrated annually.

SR 5.2.18 requires the removal and inspection of one entire helium circulator every 10 calendar years. Included in this inspection is examination of bearing surfaces, seal surfaces, brake system, buffer seal system, labyrinth seals, compressor wheel rotor, turbine wheel, and pelton wheel.

- Bearing Water System - Operability of the normal bearing water system is specified in LCO 4.2.2 as part of the requirements to establish helium circulator operability. Current surveillance requirement SR 5.2.8 requires that both the normal and emergency bearing water makeup pump be operated in the recycle mode every three months. The associated instruments and controls are functionally tested in conjunction with these tests and calibrated annually. Proposed revision to SR 5.2.8 (P-83416) will require, if accepted, that each bearing water pump and its associated instruments and controls be functionally tested at each scheduled shutdown. Additionally, it will require an annual calibration of the bearing water pump instruments.
- Bearing Water Accumulators - bearing water accumulator operability is required for helium circulator operability per LCO 4.2.2 c). Surveillance requirement SR 5.2.9 currently requires that the bearing water accumulators, instrumentation, and controls be functionally tested monthly and calibrated quarterly.

- Service Water Pumps - LCO 4.2.4 requires that at least two service water pumps and the associated pump pit be operable during power operation to ensure the capability of supplying essential components with cooling water. Proposed revision to surveillance requirement SR 5.2.24 (P-83416) will require, if accepted, that each service water pump and its associated instruments be functionally tested monthly. Additionally, the instruments shall be calibrated annually, and the pump performance and mechanical condition verified annually.
 - Instrument Air - LCO 4.3.6 requires that at least two instrument air compressors, their associated air receivers, and two main air headers to the reactor building and turbine building be operable during power operation to ensure air supply to essential instrumentation required for safe shutdown cooling. Surveillance requirement SR 5.3.6 requires that the pressure indicators and low pressure alarms on the instrument air receiver tanks and headers be functionally tested monthly and calibrated annually.
 - Safe Shutdown Cooling Valves - Surveillance requirement SR 5.3.4 requires that those valves that are pneumatically, hydraulically, or electrically operated which are required for actuation of the Safe Shutdown Cooling mode of operation be tested annually. In addition, this test shall include the normally closed check valves which are required to open for actuation of the safe shutdown cooling mode of operation. Additionally, proposed revisions to SR 5.3.4 (P-83416) will require, if accepted, that valves which must be manually positioned for actuation of the safe shutdown cooling mode of operation be tested annually.
- II.F.1.1 (Accident-Monitoring; Noble Gas Monitor)
- This item will be addressed further pending resolution of NRC review of currently installed instrumentation.

- II.F.1.3 (Accident-Monitoring; Containment High-Range Monitor)

The upper limit of dose rate during Design Basis Accident-1 (DBA-1), a permanent LOFC, in the reactor building has been determined by PSC analysis to be 1.4 rad/hour. LCO 4.4.3 currently stipulates operability requirements for several area monitors which have upper limits of 10 rad/hour which would be adequate to provide information regarding Fuel Deck dose rates during the course of DBA-1 type events. It must be noted that the design of the reactor building at FSV does not provide for hold-up of releases, and as such, no correlation to offsite dose equivalence may be drawn from any readings on Fuel Deck area monitors. The FSV containment equivalent is the PCR.V.

PSC has recently completed installation of a new detector for RT-93250-14 providing an upper limit of 10^4 rad/hour on the fuel deck. Though this monitor will, in no way, enhance the safe operation of FSV (criteria for LCO, 10CFR50.36), PSC will add RT-93250-14 to LCO 4.4.3 as Group 7.

In the event of inoperability of this monitor, corrective action will be to either restore the monitor to operable status within 7 days, or, in the event of inability to restore operability, prepare and submit a special report to the Commission within 14 days following the event, outlining the cause of the inoperability and the plans and schedule for restoring the monitor to operability. It is anticipated that the forementioned Technical Specification changes will be proposed by June 29, 1984.

- II.F.2 (Instrumentation for Detection of Inadequate Core Cooling)

This issue will be addressed relative to Regulatory Guide 1.97 implementation, at a later date.

- III.D.3.4 (Control Room Habitability Requirements)

As was recently discussed with the NRC Project Manager for the Fort St. Vrain Project, we have reviewed this item and made the following determinations or commitments to ensure compliance with the intent of this item.

- Three room complex HVAC Fans - The current Technical Specifications do not presently have requirements regarding operability of the three-room complex HVAC fans. PSC will review the existing system, as accepted, and submit a proposed Limiting Condition for Operation by the end of June, 1984. The three-room complex HVAC fans are currently tested in accordance with SR 5.10.1 on an annual basis.
- Control Room Dampers - LCO 4.10.1 currently requires that the HVAC room isolation dampers for the control room, auxiliary electric room, and the 480 volt switchgear room be operable during power operation. Surveillance testing requirement SR 5.10.1 tests actuation of the three-room complex isolation dampers on an annual basis.
- Three-Room Complex HVAC Filters - The HEPA filtration system for the intake to the three room complex is scheduled to be replaced in the near future, in response to an NRC open item. The purpose of this replacement is to provide a testable unit. The anticipated date of completion for this task is October 1, 1984. Within 30 days of completion of this replacement, PSC will submit a proposed Limiting Condition for Operation and Surveillance Testing requirement consistent with the intent of this item and the design of the as-installed system.
- Chlorine Detector - PSC will provide by June 29, 1984, a proposed Limiting Condition for Operation and Surveillance Testing requirement consistent with the intent of this item, and the design of the FSV chlorine detection system.

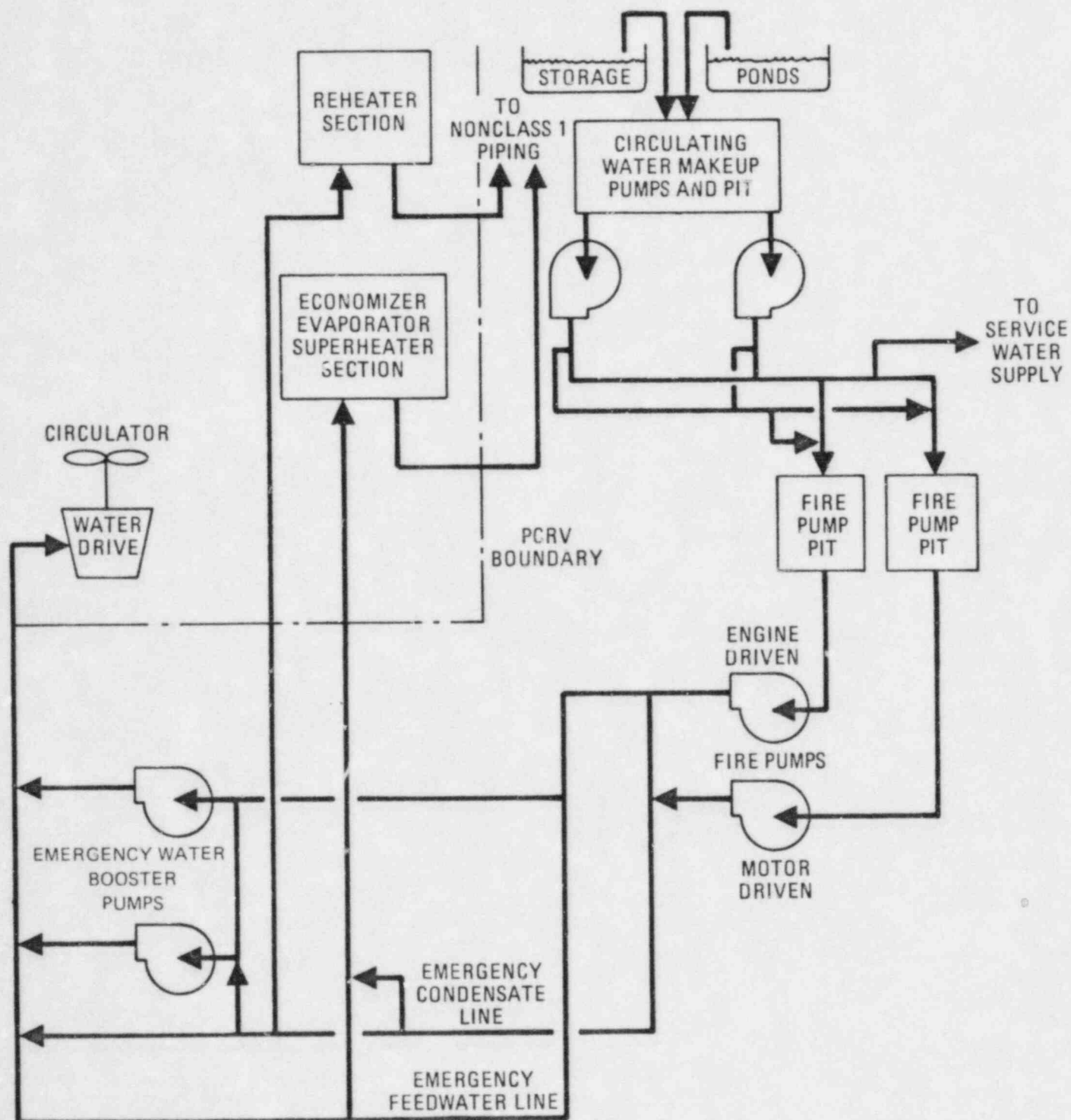


Figure 10.3-4 Schematic Flow Diagram: Cooling with Safe Shutdown Equipment



Attachment 2--P-84101

UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76011

March 8, 1984

Docket: 50-267

G-84080

rec'd

3-12-84

Mr. O. R. Lee, Vice President
Electric Production
Public Service Company of Colorado
P.O. Box 840
Denver, Colorado 80201

Dear Mr. Lee:

We have reviewed your February 9, 1984, (P-84046) letter and disagree with your conclusion that no revisions to the Fort St. Vrain (FSV) Technical Specifications (TS) are required to finalize those NUREG-0737 "Clarification of TMI Action Plan Requirements" items presented in Generic Letters 83-36 and 83-37 dated November 1, 1983. A detailed assessment of the changes we feel are needed to bring your TSs to the level of necessary conformance with present NRC positions is contained in the enclosure to this letter.

It should be noted that 10 CFR 50.36(c)(2) and (3) define a limiting condition for operation (LCO) to be the lowest functional capability required for safe operation of the facility and a surveillance requirement to be the testing necessary to assure that quality is maintained and that the LCO will be met. In addition, the provisions of 10 CFR 50.36(d)(3) provide for the upgrading of a plant's TSs, at the initiative of the Commission, to the scope and content which would be required if a new license were being issued.

We request that you review the enclosure and provide your commitment to include appropriate provisions (following the guidance provided in the above mentioned generic letters) into the FSV TSs together with a schedule for submitting an application. This commitment should be made in accordance with the provisions of 10 CFR 50.54(f) and within 20 days of the date of this letter.

This request was approved by the Office of Management and Budget under Clearance Number 3150-0065 which expires September 30, 1985.

If you have any questions on this subject, please contact your NRC project manager.

Sincerely,

~~8443136234~~ (3)
E. H. Johnson

E. H. Johnson, Chief
Reactor Project Branch 1

Enclosure: As stated

cc: Attached List

Changes for Conformance to NUREG-0737

- II.B.1 No further action is necessary.
- II.B.3 Provisions as stated in the Model TS should be included in the FSV TS. As indicated in the Model TS, it is acceptable to maintain the details of the program in appropriate plant manuals.
- II.E.1.1 The referenced LCO 4.3.4 does not adequately define the operability requirements nor are any surveillance requirements included to ensure this LCO is met. LCO 4.3.4 should be revised to specify operability conditions and the appropriate corrective action to be taken when those conditions are not met. In addition, appropriate surveillance testing requirements should be included in the FSV TS which demonstrate header operability including proper circulator operation when powered from each header.
- II.F.1.1 The range of the installed monitor is under evaluation and will be the subject of future correspondence.
- II.F.1.2 No further action is necessary.
- II.F.1.3 The range of the installed monitor is under evaluation and will be the subject of future correspondence. However, provisions must be included at this time for the installed monitor's operability and testing.
- II.F.1.4 No further action is necessary.
- II.F.1.5 No further action is necessary.
- II.F.1.6 No further action is necessary.
- II.F.2 All instrumentation for which credit is taken to detect inadequate core cooling must be included in the TS, both LCO and surveillance testing. However, this item has been superceded by the implementation of Regulatory Guide 1.97 in response to Generic Letter 83-28 and discussion of appropriate TS will be included with that issue.
- III.D.3.4 The requirements for control room habitability must be included in the TS. These requirements include both LCO and surveillance requirements for the ventilation system's fans, dampers, filters, and protective features. The proposed changes should incorporate the guidance contained in the Model TS. In addition, the chlorine detection system should be included in the FSV TS as shown in the Model TS. Any changes to the chlorine detection system, which you committed to install to resolve NRC concerns, must continue to meet present NRC staff positions.

Fort St. Vrain
cc list

C. K. Millen
Senior Vice President
Public Service Company
of Colorado
P. O. Box 840
Denver, Colorado 80201

James B. Graham, Manager
Licensing and Regulation
East Coast Office
General Atomic Company
2021 K Street, NW, Suite 709
Washington, DC 20006

J. K. Fuller, Vice President
Public Service Company
of Colorado
P. O. Box 840
Denver, Colorado 80201

G. L. Plumlee
NRC Senior Resident Inspector
P. O. Box 640
Platteville, Colorado 80651

Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Chairman, Board of County Commissioners
of Weld County, Colorado
Greeley, Colorado 80631

Regional Representative
Radiation Programs
Environmental Protection Agency
1860 Lincoln Street
Denver, Colorado 80203

Don Warembourg
Nuclear Production Manager
Public Service Company of Colorado
P. O. Box 368
Platteville, Colorado 80651

Albert J. Hazle, Director
Radiation Control Division
Department of Health
4210 East 11th Avenue
Denver, Colorado 80220

Kelly, Stansfield & O'Donnell
Public Service Company Building
Room 900
550 15th Street
Denver, Colorado 80202