NOTES FOR TABLES 4.4-1 through 4.4-4 (continued)

(r) Separate instrumentation is provided on each circulator for this functional unit. Only the affected helium circulator shall be shut down within 12 hours if the indicated requirements are not met.

(s) Deleted.

(t) A primary coolant dew point moisture monitor shall not be considered operable unless the following conditions are met:

1)

Reactor Power Range	Minimum Sample Flow
Startup to 2%	1 scc/sec.
> 2% - 5%	5 scc/sec.
> 5% - 20%	15 scc/sec.
>20% - 35%	30 scc/sec.
>35% - 100%	50 scc/sec.

2) Minimum flow of item 1) is alarmed in the control room and the alarm is set in accordance with the power ranges specified.

3) Deleted.

4) Fixed alarms of 1 scc/sec and 75 scc/sec are operable.

ATTACHMENT 3

SAFETY EVALUATION

SAFETY EVALUATION

Background

The Dewpoint Moisture Monitoring system is a part of the Plant Protective System. It is designed to provide automatic protective action in the event of moisture ingress to the primary coolant system during reactor operation at power. The Dewpoint Moisture Monitor system is used to detect high moisture in the primary coolant loop, and provide a signal to the Plant Protective System circuitry, which scrams the reactor and shuts down and dumps the primary coolant loop when the moisture content in the PCRV reaches the instrument setpoint.

The Dewpoint Moisture Monitor system consists of eight detectors. Three detectors continuously sample the primary coolant stream in each primary coolant loop. Two of these three detectors operate in the trip mode only. The third detector in each loop is a combination trip and indicating instrument. Two other detectors sample a mixture of primary coolant from both loops.

Each Dewpoint Moisture Monitor channel consists of a light source, a reflected light detector mirror and an amplifier assembly. The light source consists of a lamp and a photo cell. The photo cell is used to provide a feedback signal for adjustment of light intensity. The detector and amplifier, in general terms, convert the reflected light to electrical signals to provide input into the trip and indicating circuits. The amount of light reaching the photo cell is reflective of the amount of moisture collected on the mirror.

The response time of the Dewpoint Moisture Monitor system is governed by two criteria. The first is the time to physically transport the sample gas to the mirror. The second is the time to condense moisture in the sample gas to scatter the incident light being reflected to the photo cell.

An affect on the required sample flow rates is that of the thermal environment within the penetration. A greater than 185°F temperature environment where the detectors are housed could have a potential adverse affect on the response time of the system. The purpose of monitoring the ambient temperature in the penetration was to verify the design basis assumption, included in GA reports GAA13677 and GAA13823, that the environment is no greater than 185°F for the Dewpoint Moisture Monitor detectors located in the instrument penetrations. This temperature criterion was incorporated into the Fort St. Vrain Technical Specifications by Amendment 13. This reflected the Public Service Company of Colorado (PSC) commitment to install temporary thermocouples to obtain data to confirm the temperature design basis.

Data from installed thermocouples has been collected for over 10 years. This data indicates the maximum temperature in the instrument penetrations was 135°F, which includes operations up to and including full power operation. This demonstrates the validity of the design basis assumption.

Evaluation

The proposed change to the Fort St. Vrain Technical Specifications deletes the requirement to monitor the temperature in the closed instrument penetration. This requirement was incorporated into the Fort St. Vrain Technical Specifications by Amendment 13. The data collected over the past 10 years has demonstrated the design basis assumption is valid over the complete power range. The requirement to monitor the temperature is no longer required based on this conclusion.

Consideration of the proposed change to delete the temperature monitoring requirement from the conditions to be met to consider Dewpoint Moisture Monitor system operable involves evaluation of accident or equipment functions previously evaluated in the FSAR. As required by 10CFR50.59, the following questions are addressed:

1) Has the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the FSAR been increased?

   Removing monitoring instrumentation and recording inputs does not compromise the system's capability to initiate its protective features. Since the recorded data confirmed the validity of the design basis assumption, the system operational and functional requirements are maintained as designed. System response is maintained as previously tested and evaluated. The sample flow rates and alarm requirements are not affected by this change.

2) Has the possibility of an accident or malfunction of a different type than any evaluated previously in the FSAR been created?

Since the monitoring instrumentation and recording data histories have demonstrated valid design basis assumptions, the Dewpoint Moisture Monitor system will perform its intended function as designed, tested, and evaluated. The monitoring instrumentation is completely independent of any Dewpoint Moisture Monitor control or protective function.

3) Has the margin of safety, as defined in the basis for any Technical Specification been reduced?

The monitoring instrumentation has confirmed the original design basis assumptions. The sample flow rate and associated alarm requirements remain the same.

Public Service Company of Colorado (PSC) concludes that operability of the Dewpoint Moisture Monitor system is adequately demonstrated by the remaining Technical Specification requirements: a minimum sample flow rate for each specified power range, a minimum flow alarm in the control room set in accordance with the specified power range, and fixed alarms of 1 scc/sec and 75 scc/sec. Monitoring of the instrument penetration environments has demonstrated the temperatures will not exceed 185°F over the full power range. PSC considers this design basis assumption to have been validated and it is no longer required to be monitored. Thus, the proposed change to the Fort St. Vrain Technical Specifications does not result in an unreviewed safety question.

ATTACHMENT 4

SIGNIFICANT HAZARDS

CONSIDERATION

SIGNIFICANT HAZARDS CONSIDERATION

I. Evaluation

Based upon the safety evaluation provided as Attachment 3 to this Technical Specification proposed change, it is concluded that deleting the requirement to monitor the temperatures in the instrument penetrations will not have a deleterious affect on operation of the Dewpoint Moisture Monitor system. It is further concluded that the proposed change does not result in an unreviewed safety question.

1. Neither the probability nor consequences of accidents previously evaluated have been affected by this proposed Technical Specification change. The data from the monitoring instrumentation and recording inputs confirmed a valid design basis assumption. Removing the instrumentation does not compromise the system's capability to perform its design function.

2. The possibility of a new or different kind of accident from those previously evaluated has not been introduced. The monitoring instrumentation is completely independent of any Dewpoint Moisture Monitor system control or protective function.

3. No margins of safety have been reduced as a result of the proposed change. The intent of the monitoring was to verify a design basis assumption, which was verified. The remaining conditions to be met provide assurance that the response time of the system will be adequate, and the operators will be alerted if the sample flow rates are unacceptable.

II. Conclusion

Based on the evaluation provided above, it is concluded that operation of Fort St. Vrain in accordance with the proposed changes will not (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in any margin of safety. Therefore this change will neither create an undue risk to the health and safety of the public nor involve any significant hazards consideration.