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MINUTES OF THE ACRS SUBCOMMITTEE MEETING ON
THE WOLF CREEK GENERATING STATION
EMPORIA, KANSAS
APRIL 21-22, 1982

The ACRS Wolf Creek Generating Station Subcommittee met at the Holiday Inn in Emporia, Kansas, on April 21-22, 1982. The Subcommittee reviewed the application of Kansas Gas & Electric Co. for a license to operate the Wolf Creek Generating Station, Unit No. 1. The Subcommittee and consultants toured the Wolf Creek Generating Station (WCGS) on the morning of April 21, 1982. Notice of this meeting was published in the Federal Register on April 5, 1982. There was one oral statement and one written statement from the public at the meeting. The entire meeting was open to the public and Mr. Richard Major was the Designated Federal Employee. A copy of the Applicants' presentation is filed at the ACRS offices. Included with these minutes are Attachments A - Federal Register Notice, B - Meeting Schedule, and C - The Attendee List.

Wednesday, April 21, 1982

Plant Tour

Members of the Subcommittee (J. Ray and W. Kerr) and consultants (J. Buck, J. Maxwell, G. Thompson, and M. Trifunac) toured the Wolf Creek Plant with representatives from Kansas Gas & Electric Co. (KG&E) and their contractors on the morning of April 21, 1982. The tour was divided into a seismic review group and a plant features group in order to maximize time usage. The tour lasted approximately three hours.

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Subcommittee MeetingChairman's Introduction

Mr. Ray opened the meeting at 1:30 p.m. He noted that this meeting was an open meeting of the Advisory Committee on Reactor Safeguards Subcommittee on Wolf Creek Generating Station, Unit No. 1. He stated the purpose of the meeting was to review the application of Kansas Gas & Electric Co. for an operating license for Wolf Creek Generating Station, Unit No. 1

Introduction by NRC Staff

J. Hopkins, NRC Staff Project Manager, initiated the Staff presentation by stating that Wolf Creek Generating Station (WCGS) Unit 1 is a SNUPPS (Standardized Nuclear Unit Power Plant System) design, as is Callaway Unit 1. Mr. Hopkins noted that portions of WCGS were not constructed to the SNUPPS design and, therefore, Wolf Creek has both duplicate plant and site specific open items. Non-standard plant features at WCGS include the circulating water system screen house, ultimate heat sink dam and cooling lake, essential service water pump house, administrative and support buildings, tech. support center, emergency operations facility, switchyard and offsite, power, storage tanks and security facilities. There are no dissenting Staff technical opinions regarding WCGS.

T. Vandell, NRC Senior Resident Inspector, presented a summary of I&E noncompliance items. He reported that there have been 18 items of noncompliance at WCGS during the last 30 months. Mr. Vandell further stated that KG&E has been responsive to correcting items of noncompliance.

Introduction by Kansas Gas & Electric Co. - G. L. Koester

G. Koester, KG&E Vice President-Nuclear, followed with the KG&E's presentation of Project Organization and Management. Mr. Koester's sole corporate responsibility is for the Wolf Creek Project. WCGS is owned by KG&E (47%), Kansas City Power & Light Co. (47%), and Kansas Electric Power Cooperative (6%). These three utilities are the Applicants for WCGS, Unit No. 1. KG&E, however, is the lead company during project construction and will be responsible for operating WCGS.

WCGS is located 53 miles south of Topeka, 100 miles east-northeast of Wichita, and about 70 miles southeast of Kansas City, Missouri. The site comprises approximately 9818 acres including a 5000 acre man-made lake for cooling water. Topography at the site is generally flat. The low population zone is inhabited by 70 people and the population within a 10 mile radius of the plant numbers 4100. There are no airports, industries, or military facilities near the site. The nearest population center is Emporia, Kansas (estimated 1980 population of 25,019), 28 miles west-northwest of the site.

As stated previously, WCGS utilizes the SNUPPS concept. The station uses a Westinghouse, four loop, pressurized water, nuclear steam supply system which produces 3425 MW(t). The turbine generator is supplied by GE. Cooling is provided by a man-made lake supplied by the Neosho River and

the John Redmond Reservoir. An underwater dam in the lake provides the site with an ultimate heat sink. This method of cooling is the major difference between WCGS and Callaway which employs a natural draft cooling tower. The SNUPPS power block Architect Engineer is the Bechtel Power Corp. of Gaithersburg, Maryland. Mr. Koester added that Sargent & Lundy of Chicago, Illinois were employed as the site A/E. Four 345 KV transmission lines serve the plant on four separate rights-of-way.

The project schedule was reviewed from CP application request, April 1974, through the expected date of fuel loading, December 1983. WCGS is currently 75.8% complete.

KG&E Organization and Management

Mr. Koester next addressed the structure of KG&E's WCGS Project Organization and Management. He briefly described the various WCGS support organizations - Nuclear Services, Quality Assurance, Nuclear Operations, Project Planning and Controls, Wolf Creek Construction and Nuclear Plant Engineering. In addition to these project support organizations, the Nuclear Safety Review Committee (NSRC), Quality Assurance Committee, and the Technical and Administration Assistance provide project management assistance and report directly to Mr. Koester.

The NSRC is a 10 member offsite panel of persons with various educational and career backgrounds. The panel is comprised of six KG&E managers (five associated with WCGS), three outside members, and one KG&E vacancy. R. Hagan, KG&E Manager of Nuclear Services, and M. Johnson, KG&E Manager of Nuclear Plant Engineering are the Chairman and Vice Chairman of the NSRC, respectively. The total nuclear experience of the NSRC is 138 years, but this figure includes national lab, vendor, navy, and commercial nuclear experience. The actual amount of commercial nuclear experience in the NSRC is roughly 20 years. The main purpose of the NSRC is to review drafts of proposed WCGS Technical Specifications prior to their submittal to the NRC.

It is important to note that KG&E does not have a wealth of commercial nuclear experience throughout its nuclear related organizations. The applicant, however, is dedicated to maintaining a permanent and stable staff to support WCGS. The majority of these employees are native Kansans (80% at present).

The offsite Quality Assurance Committee is chaired by Mr. Koester. The Vice Chairman position is held by KG&E Vice President of Corporate Engineering, Mr. B. Ruddick. There are four additional members - the WCGS Construction Manager, a member of KG&E's Legal Staff, Manager of Fossil Production Department, and Mr. T. Keenan, Director of Nuclear Operations. The Committee is responsible for measuring the effectiveness of the Quality Assurance Program for the Nuclear Project within the Company.

The WCGS total project staff buildup is 71% complete. There are 543 total staff positions including 444 professional positions. The professional staff buildup is 67% complete and most vacancies are attributed to the site permanent professional security force and plant maintenance staff. KG&E's current attrition rate is 3.6% per year leaving the Wolf Creek Nuclear Project.

SNUPPS Organization and Design Assurance Program

The SNUPPS Organization and Design Assurance Program were the next subject of discussion. SNUPPS consists of three utilities, (KG&E, KCP&L, and Union Electric), and two nuclear units, Wolf Creek and Callaway. The SNUPPS organization was founded in 1973 comprising five utilities and five plants. The other utilities before cancellations were Rochester Gas & Electric and Northern States Power. The SNUPPS utilities authorized a 12 member SNUPPS Staff to be the interface on their behalf in managing the lead A/E, Bechtel. Bechtel supervises Westinghouse, General Electric, and other sub-contractors.

The SNUPPS Design Assurance Program consists of a continuing SNUPPS Staff and utility review and approval of key design features and design documents selected by SNUPPS; SNUPPS Staff and utility audits of A/E, NSSS and subvendor design related activities and processes; and technical verification audits of selected design performed by the SNUPPS Staff and utility specialists with or without off-project designer specialists. One example is that the steam generators in the original SNUPPS design were type D. Early in the design stage the steam generator was changed

to a type F. The type F generator has a different tube support plate design using stainless instead of carbon steel. Furthermore, the tubing is heat treated to reduce IGA and the feedwater flow patterns are modified in order to reduce sludge buildup.

Offsite and Onsite WCGS Support Organizations - Kansas Gas & Electric

T. Keenan, KG&E Director of Nuclear Operations, supervises the Startup Group, the Plant Superintendent, Nuclear Training, and the Program Management Groups. One-third of the Startup Group is permanent KG&E with the remainder supplied by Bechtel and Westinghouse. System transfer from construction to startup is performed by walkdown of the specified system by both construction and startup engineers. The purpose of the walkdown is to identify incomplete system construction. The walkdown exercise is performed three times to assure system completeness.

The remaining KG&E managers that report to the Vice President-Nuclear continued the organization and management narrative. M. Johnson, Manager of Nuclear Plant Engineering, has an authorized staff buildup of 37 positions. At present his staff numbers 27 including five managers with a total nuclear experience of 84 years (3 years commercial). The Nuclear Plant Engineering organization is responsible for the design, construction, and startup phase.

R. Hagan, KG&E Manager of Nuclear Services, has 54 total positions with 32 presently filled. There are 25 professional positions filled, including one manager, with a total of 140 years of nuclear experience (18 years commercial). Nuclear Services comprises Licensing, Radiological/Environmental

Assessment, Safety Engineering, and Nuclear Fuel Engineering. The Safety Engineering Group is an onsite group that acts as a technical staff for the offsite NSRC.

E. Creel, KG&E Quality Assurance Manager, is responsible for both onsite and offsite QA. There are 26 QA professionals, including 3 managers, with 140 years total nuclear experience (43 years commercial).

F. Rhodes, Wolf Creek Plant Superintendent, addressed Operations Staffing and Training. The Operations, Technical Support, Maintenance, and Plant Support groups all report to the Plant Superintendent. Mr. Rhodes also chairs the onsite Plant Safety Review Committee (PSRC). He has 20 years total nuclear experience including 13 years commercial and 5 years military nuclear experience.

Operations plans to staff 66 personnel with 51 positions currently filled. Technical support has a projected staff of 81 with 42 positions currently filled. Maintenance has a staff buildup of 46 personnel with 26 current vacancies. Plant Support has 86 positions with 55 vacancies. The total commercial nuclear experience of the entire KG&E plant staff is 177 years.

The other PSRC members include Supervisors of the Technical Support, Operations, Maintenance, Plant Support, Results Engineering, Chemistry, Health Physics, Instrumentation and Controls, Reactor Engineering, and the onsite QA Manager. This committee is utilized as a means of feedback of operating experience to the Operations Staff.

Utilization of STA - Mr. Coulthard

R. Coulthard, Nuclear Training Manager, presented KG&E's plan for utilizing the STA. KG&E plans to provide college level engineering courses to SROs at Wolf Creek in order to meet NRC Staff requirements (NUREG-0737). Also included in STA training are Nuclear Power Plant topics (Plant Fundamentals, Plant Systems, Management Skills, Mitigating Core Damage, etc.), Simulator Training, and Annual Requalification.

The NRC Staff at present requires that there be one STA on duty in addition to two SROs and two ROs per NUREG-0737. KG&E's plan would have two SROs and two ROs with one SRO being an STA. This is cited as being an open item.

Feedback of Experience to Operations Personnel and Training -Mr. Smith

D. Smith, KG&E Plant Support Supervisor, discussed the Feedback of Industry and Plant Operating Experience and the Training of Operators and Maintenance Personnel. KG&E plans to apply I&E bulletins, INPO notices, LERs, NRC inspections and other sources of nuclear power plant experience where needed at WCGS. Any action taken is overviewed by the PSRC.

KG&E uses the Westinghouse Certification Program of Theory, Systems, Simulator Use, and Examination as preliminary training for the operators. Licensed operator training at WCGS consists of site specific instruction, leadership, observation training, simulator training, college courses, and a final exam.

Use of Simulator - Mr. Coulthard

R. Coulthard, Manager of Nuclear Training, described the use of the simulator in the KG&E training program. KG&E will begin plant staff simulator training in 1983. Their simulator is currently undergoing initial testing at Pittsburg.

The Wolf Creek simulator simulates over 40 SNUPPS systems, models WCGS specific systems, replicates WCGS Main Control board, can record transients during student interaction, and can backtrack with replay capability. This simulator also has over 200 different multi-variable malfunctions and can fail any meter, component, or valve. The Wolf Creek simulator will be upgraded with respect to human factors, SPDS, In-Core Temperature and Flux System, and TMI-Lessons Learned.

Some typical accidents modeled on the Wolf Creek simulator are variable LOCAs, Steam Generator tube rupture, unisolable and isolable MSLBs, dropped rod accident, loss of reactor coolant pumps, loss of offsite electrical power and loss of emergency electrical power. Typical simulator drills for degradation beyond DBA include the TMI accident, both trains of a safeguard pump fail, multiple train instrument failure, major steam leak with small LOCA, PORV open with steam break, and mispositioned valves interrupting SI flow during LOCA.

Seismic Design of WCGS - Kansas Gas & Electric/NRC Staff

Both the NRC Staff and KG&E made presentations on the seismic design of WCGS. Frank Wilson, Kansas Geological Survey, made a brief presentation regarding his analysis of the Seismic Spectrum at Wolf Creek and an assessment of KG&E's study. He concluded his presentation

by endorsing the margin of safety used in designing WCGS. The SNUPPS portion of Wolf Creek is designed for a .2g SSE. KG&E determined that the SSE for the Wolf Creek site is .12g and applied this acceleration in designing the non-standard portions of the plant, such as the UHS submerged dam, the Essential Service Water Intake and Discharge Structures, and associated piping and equipment. The NRC Staff maintains that the SSE is .15g based on their analysis of site seismicity. The applicant is currently performing a reanalysis of the structural integrity of the affected portions of the plant. This reanalysis is expected to be complete by the end of May, 1982. The NRC Geosciences position was presented by P. Sobel.

The applicant feels that the margin of safety is adequate and expects this to be proven by the reanalysis. The NRC Staff plans to resolve this issue by reassessing the applicant's reanalysis and conducting an onsite audit of affected equipment.

Instrumentation and Control - Mr. Pippin

Mr. J. Pippin, Manager of Instrumentation and Control, addressed the areas of Control Room Design and Habitability Considerations. The WCGS control room is a replica of the Callaway control room with the exception of two site specific panels. The applicant submitted to the NRC Staff a design review of only the site specific panels at WCGS and referenced Callaway's review for the remainder. The NRC Staff is continuing its assessment of the applicant's control room design review. This is an open item.

Mr. Pippin further noted that post-TMI control room design modifications have been implemented at WCGS. Cold shutdown modifications, a radiation tracking system, auxiliary shutdown modifications, sub-cooling monitors, and an emergency response facility information system were the modifications noted in the presentation. Both normal and emergency ventilation flow schematics were presented for the control building. Control room ventilation during emergency conditions is continuously recycled through the control room filter unit providing clean air to the control room. The control room is maintained at a positive .25 inch WG pressure in order to avoid inleakage during emergency conditions.

Upgrading Control Room Human Factors - Mr. McKinstry

Mr. J. McKinstry, Operations Coordinator, presented KG&E's program for upgrading control room human factors. KG&E is modifying annunciator windows at WCGS into functional groups with standardized nomenclature. The windows are also arranged in columns according to priority. Initial system annunciations (transformer lockout, phase imbalance) are seen at the top of the annunciator panel and more critical annunciations (power loss, high temperature) at the bottom. Annunciator window engraving has been modified by enlarging letter thickness for increased legibility.

Thursday, April 22, 1982

The Subcommittee reconvened at 8:30 a.m. on April 22, 1982. Mr. L. Sherman, member of the public, requested permission to make an oral statement to the Subcommittee and this request was granted.

Oral Statement - Mr. Sherman

Mr. L. Sherman, Daniel Construction employee, was allowed to make an oral statement to the assembly at the commencement of the second day of the meeting. Mr. Sherman's statement concerned over regulation of the nuclear industry by the NRC. The thrust of his presentation was focused on welding qualifications at WCGS. He noted that the welds performed by Daniel employees at Wolf Creek either met or exceeded industry standards and that NRC excess regulations resulted in cost overruns and construction delays.

Mr. Ray thanked Mr. Sherman for his statement and the meeting proceeded.

Open Items

Mr. J. Hopkins, NRC Staff Licensing Project Manager, and Mr. G. Rathbun, KG&E Licensing Manager, respectively summarized SER open items, confirmatory items, and licensing conditions. Both presentations discussed these items and conditions according to number, whether duplicate plant or site specific, and TMI-related. The items of contention between the NRC Staff and KG&E are not of a grave nature and are being resolved in an orderly fashion. All of the open items, confirmatory items, and license conditions are expected to be resolved during the next 12 to 18 months.

There are 11 open items in total including 6 TMI-Related items. The majority of open items exist due to incomplete ongoing applicant analyses or incomplete Staff review and onsite audit. Both the NRC Staff and KG&E expect these items to be resolved without much difficulty prior to fuel loading. The following paragraphs briefly summarize the "open" items at Wolf Creek Generating Station.

-SUMMARY OF OPEN ITEMS

1. Seismic and dynamic qualification of seismic Category I mechanical and electrical equipment. The Staff cannot complete its onsite audit of this equipment until a large portion (85-90 percent) is installed. The applicant has indicated that installation of Seismic Category I equipment will be substantially complete by the first quarter of 1983. The Staff will perform an onsite audit and issue a supplement to this report also.
2. Environmental Qualification of Safety - Related Electrical Equipment
The applicant has not submitted to the Staff his environmental qualification for safety-related information as outlined in NUREG-0588, Appendix E. The Commission has issued a June 30, 1982 deadline for this information.
3. I.A.1.1. Shift Technical Advisor (TMI Action Plan)
The applicant proposes to comply with NUREG-0737 Item I.A.1.1 by upgrading the qualifications of the SROs through the college education program in which each SRO is now participating. The Staff is reviewing the applicant's proposal to comply with Item I.A.1.1 and will issue a supplement to this SER.
4. I.D.1 Control Room Design Review (TMI Action Plan)
The applicant has performed a human factors evaluation on the Wolf Creek plant specific control room panels only. The Staff is currently reviewing the resolutions proposed by the Applicant and will issue a supplement to this report.
5. III.A.1.2 Upgrade Emergency Support Facilities (TMI Action Plan)
The applicant submitted a response to the Staff position relevant to emergency response facilities (NUREG-0696) by letter dated June 1, 1981. The response provided a "conceptual" design description of Emergency Support Facilities and is still under review by the Staff.
6. Determination of Break Locations and Dynamic Effects
The applicant has not yet provided the stress summary for ASME Class 1 high-energy piping. The applicant has also not provided the results of jet impingement effects for high energy balance-of-plant pipe breaks inside containment. The Staff cannot complete its evaluation until the above information is submitted for review.
7. Pump and Valve Operability Assurance Program
The necessity for additional component testing is being considered and cannot be established without an inspection at the plant site. The Staff cannot complete its review until an onsite audit of the equipment and supporting documentation is performed.

8. Alternate Shutdown
The Staff's review of the applicant's alternate shutdown program is incomplete at this time. A supplement to this SER will be issued upon completion of this evaluation.
9. I.C.1 Guidance for the Evaluation and Development of Procedures for Transients and Accidents (TMI Action Plan)
The applicant is scheduled to respond to system-based critical safety function restoration guidelines by July 1982. The revised guidelines will incorporate the short-term reanalysis of small-break LOCAs and inadequate core cooling.
10. I.C.8 Pilot Monitoring of Selected Emergency Procedures for NTOL Applicants (TMI Action Plan)
The Staff will review the applicant's submittal for compliance with the final Staff guidelines regarding upgrading of emergency operating procedures (NUREG-0799).
11. II.B.2 Plant Shielding to Provide Access to Vital Areas and Protect Safety Equipment for Post-Accident Operation. (TMI Action Plan)
The applicant plans to perform a shielding and personnel exposure analysis to identify accessibility to vital areas and evaluate doses to personnel. This remains an open item pending receipt of this analysis and acceptance.

SER Confirmatory Items and License Conditions

There are a total of 34 confirmatory items including 10 TMI-Related items. Confirmatory items are considered to be fundamentally resolved by the Staff, but only requiring certain corroborative information from the applicant for closure. KG&E has committed to supply this information to the Staff.

The SER identifies 18 license conditions including 1 TMI-Related item. These license conditions may be desirable to ensure that Staff requirements are met during plant operation. The license condition can be in the form of a requirement in the operating license, or a limiting stipulation for operation in the Technical Specifications appended to the license. The Staff expects most to be implemented prior to licensing and therefore will not become license conditions.

Radiation Protection Program and Emergency Operating Procedures - KG&E

Mr. R. Lewis, KG&E Supervisor for Radiological and Environmental Assessment, briefly discussed the Radiation Protection Program at WCGS. The various buildings at WCGS are zoned by radiation dose level in accordance with their ALARA program. Plant systems and structures where radioactive materials are present are shielded and strategically located to reduce personnel exposure. Equipment handling radioactive materials (pumps, valves, demineralizers, etc.) are equipped with remote instrumentation and controls.

Mr. J. Zell, Operations Supervisor, addressed the Preparation of Emergency Operating Procedures for WCGS. He noted that Westinghouse Generic guidelines are applicable to Wolf Creek. Mr. Zell also discussed the Defense in Depth Protection at WCGS by pointing out the barriers to the release of radiation including the fuel matrix and cladding, RCS boundary, and containment. These barriers maintain sub-criticality, core cooling, and control of reactor coolant inventory.

Intervenors' Written Statement - Mr. Simpson and KG&E Emergency Planning - Mr. Lewis

The Wolf Creek Subcommittee had the benefit of a written statement from Mr. J. Simpson, attorney, representing intervenors Mary Salava and Wanda Christy. The Subcommittee had received a request for this statement from Mr. Simpson before the meeting. Mr. Simpson stated that his clients chose to contest KG&E's request for an operating license because they feel the Coffey County plan for emergency evacuation is inadequate. Mr. Simpson noted that the Coffey County government is the only local agency to submit plans for an evacuation. He further noted the Draft Environment Statement for WCGS stated that the emergency plans are inadequate. Specific inadequacies noted by Mr. Simpson are insufficient training of county employees, inadequate early warning system, lack of radiological monitoring equipment, insufficient staff buildup, and a lack of water for decontamination.

Mr. R. Lewis, KG&E Supervisor for Radiological and Environmental Assessment, presented the Emergency Planning for Wolf Creek. Mr. Lewis noted

that the state of Kansas has studied the Nebraska plan for Cooper Nuclear Plant. He stated that both state and county plans for emergency procedures are scheduled to be submitted to the FEMA in June of 1982. He further stated that 6 sirens are deployed around WCGS for 15 minutes emergency notification in the event of a site emergency. KG&E is currently pursuing a conceptual study of a 10 mile emergency zone plan.

Mr. Simpson stated that his clients chose to contest KG&E's request for an operating license because they feel the Coffey County plan for emergency evacuation is inadequate. Mr. Simpson noted that the Coffey County government is the only local agency to submit plans for an evacuation. He further noted the Draft Environment Statement for WCGS stated that the emergency plans are inadequate. Specific inadequacies noted by Mr. Simpson are insufficient training of county employees, inadequate early warning system, lack of radiological monitoring equipment, insufficient staff buildup, and a lack of water for decontamination.

Mr. L. Morgan, KG&E Senior Engineer for Systems Planning, and Mr. J. Zell, Operations Supervisor, discussed AC/DC Power Reliability at WCGS. The KG&E speakers briefly described the Southwest Power Pool, the 345 KV system

in Missouri and Kansas (MOKAN), and the 161 KV transmission System near WCGS. A discussion of KG&E's Station Blackout Evaluation described the philosophy used to assure safe shutdown. System isolation with PORV closure, reduction in leakage, secondary heat removal of RCS (Decay Heat Removal, Feed and Bleed, Condensate Storage Tank, Demineralized Water Storage Tank, and Cooling Lake Water via Diesel Fire Pump), Class IE Battery Systems, emergency as back-up HVAC system, emergency communications and lighting are the systems dedicated to maintaining control of the reactor in the event of station blackout.

KG&E has two diesel generators for emergency power in the event of loss of offsite power and are periodically tested and serviced for reliability. Mr. Koester, Vice President-Nuclear, added that KG&E and KCP&L have committed first priority to WCGS in the event of loss of offsite power. Backup power, such as gas turbines, can be started and on-line in 30 minutes.

Systems Interactions Studies - KG&E

Mr. G. Rathbun, KG&E Licensing Manager, briefly discussed Systems Interactions Studies by KG&E. Mr. Rathbun noted that the fire hazards analysis was one of the more complicated systems interactions studies. KG&E performed a Probabilistic Risk Assessment (PRA) of Auxiliary Feedwater Reliability. KG&E is also participating with the Central Electricity Generating Board of the United Kingdom and SNUPPS in

PRA analyses. There are also ongoing studies of pipe break-effects (flooding, jet impingement, pipe whip, and environmental effects), internally and external generated missile effects, earthquake induced failures, fire hazards, and human introduced hazards. KG&E is also examining Systems Interactions at Seabrook Nuclear Station.

NRC Position on Hydrogen Control

The NRC Staff next addressed Hydrogen Control for Large Dry Containments as applicable to WCGS. The Staff is utilizing 10 CFR 50.44 for hydrogen control in large dry containments and is satisfied that the applicants containment integrity can accommodate the pressure from hydrogen combustion. Mr. J. Hopkins, NRC Licensing Project Manager, stated that KG&E has performed calculations to the Staff's satisfaction for a 5% metal water reaction for WCGS. SNUPPS has performed an analysis for the 75 percent metal-water reaction yielding a 60 pound pressure increase which does not fail the containment. WCGS hydrogen control is consistent with full power licensing of North Anna, Salem 2, Farley 2, and TMI-1 restart. Furthermore, the Staff is not now imposing any new requirements called for in Item II. B.8 of the TMI Action Plan, NUREG-0660.

Conclusion

Mr. J. Ray, Subcommittee Chairman, addressed the KG&E representatives regarding their presentation before the full ACRS scheduled for May 6, 1982. Mr. Ray noted the items of specific concern and submitted a draft schedule to KG&E noting approximate times for each subject. The meeting was adjourned at 12:00 Noon.

NOTE: A complete transcript of the meeting is on file at the NRC Public Document Room at 1717 H St., NW., Washington, D.C. or can be obtained from the Alderson Reporters, 300 7th St. SW, Washington, D.C. 202-634-1413.

prevent diversion of this carrier's traffic to other modes. We find these circumstances to warrant a provisional exemption.

CR's contract tariff may become effective on one day's notice. We will apply the following conditions which have been imposed in similar exemption proceedings:

If the Commission permits the contract to become effective on one day's notice, this fact neither shall be construed to mean that this is a Commission approved contract for purposes of 49 U.S.C. 10713(g) nor shall it serve to deprive the Commission of jurisdiction to institute a proceeding on its own initiative or on complaint, to review this contract and to disapprove it.

Subject to compliance with these conditions, under 49 U.S.C. 10505(a) we find that the 30 day notice requirement in these instances is not necessary to carry out the transportation policy of 49 U.S.C. 10101a and is not needed to protect shippers from abuse of market power. Further, we will consider revoking this exemption under 49 U.S.C. 10505(c) if protests are filed within 15 days of publication in the Federal Register.

This action will not significantly affect the quality of the human environment or conservation of energy resources.

(49 U.S.C. 10505.)

Dated: March 29, 1982.

By the Commission, Division 2,
Commissioners Gresham, Gilliam, and Taylor. Commissioner Taylor is assigned to this Division for the purpose of resolving tie votes. Since there was no tie in this matter, Commissioner Taylor did not participate.

Agatha L. Mergenovich,
Secretary.

(FR Doc. 82-8890 Filed 4-3-82; 9:46 am)
BILLING CODE 7835-01-8

NATIONAL SCIENCE FOUNDATION

Advisory Panel for Behavioral and Neural Sciences, Subpanel on Linguistics, Meeting

In accordance with the Federal Advisory Committee Act, as amended, Pub. L. 92-463, the National Science Foundation announces the following meeting:

Name: Subpanel on Linguistics of the Advisory Panel for Behavioral and Neural Sciences.

Date and time: April 22-24, 1982, 9:00 a.m. to 5:00 p.m. each day.

Place: Room 421, National Science Foundation, 1800 G Street, NW, Washington, D.C. 20550.

Type of meeting: Closed—4/22 and 4/24—9:00 a.m.—5:00 p.m.; 4/23—1:00 p.m.—5:00 p.m.; Open—4/23—9:00 a.m.—12:00 noon.

Contact person: Dr. Paul G. Chapin, Program Director, Linguistics Program, Room 320, National Science Foundation, Washington, D.C. 20550 Telephone (202) 357-7898.

Summary minutes: May be obtained from the contact person, Dr. Paul G. Chapin, at the above stated address.

Purpose of subpanel: To provide advice and recommendations concerning support for research in Linguistics.

Agenda: Closed—April 22 and 24, 9:00 a.m.—5:00 p.m.; April 23, 1:00 p.m.—5:00 p.m. to review and evaluate research proposals as part of the selection process for awards.

Open—April 23, 9:00 a.m.—12:00 noon.

General discussion of the current status and future plans of the Linguistics Program.

Reason for Closing: The proposals being reviewed include information of a proprietary or confidential nature, including technical information concerning individuals associated with the proposals. These matters are within exemptions (4) and (6) of 5 U.S.C. 552b(c), Government in the Sunshine Act.

Authority to close meeting: This determination was made by the Committee Management Officer pursuant to provisions of Section 10(d) of Pub. L. 92-463. The Committee Management Officer was delegated the authority to make such determinations by the Director, NSF, on July 6, 1979.

M. Rebecca Winkler,
Committee Management Coordinator,
March 31, 1982.

(FR Doc. 82-8840 Filed 4-3-82; 9:46 am)
BILLING CODE 7846-01-8

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Reactor Safeguards, Subcommittee on Wolf Creek, Meeting

The ACRS Subcommittee on Wolf Creek will hold a meeting on April 21 and 22, 1982, at the HOLIDAY INN (316/343-2200), 2700 W. 18th Street, Emporia, KS. The Subcommittee will review the application of the Kansas Gas and Electric Company, et al. for an operating license.

In accordance with the procedures outlined in the Federal Register on September 30, 1981 (46 FR 47903), oral or written statements may be presented by members of the public, recordings will be permitted only during those portions of the meeting when a transcript is being kept, and questions may be asked only by members of the Subcommittee, its consultants, and Staff. Persons desiring to make oral statements should notify the Designated Federal Employee as far in advance as practicable so that appropriate arrangements can be made to allow the necessary time during the meeting for such statements.

The entire meeting will be open to public attendance except for those

sessions which will be closed to protect proprietary information (Sunshine Act Exemption 4). One or more closed sessions may be necessary to discuss such information. To the extent practicable, these closed sessions will be held so as to minimize inconvenience to members of the public in attendance.

The agenda for subject meeting shall be as follows:

Wednesday, April 21, 1982—1:00 p.m. until the conclusion of business
Thursday, April 22, 1982—8:30 a.m. until the conclusion of business

During the initial portion of the meeting, the Subcommittee, along with any of its consultants who may be present, may exchange preliminary views regarding matters to be considered during the balance of the meeting.

The Subcommittee will then hear presentations by and hold discussions with representatives of the Kansas Gas and Electric Company, the NRC Staff, their consultants, and other interested persons regarding this review.

Further information regarding topics to be discussed, whether the meeting has been cancelled or rescheduled, the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor can be obtained by a prepaid telephone call to the cognizant Designated Federal Employee, Mr. Richard K. Major (telephone 202/634-1414) between 8:15 a.m. and 5:00 p.m., e.s.t.

I have determined, in accordance with subsection 10(d) of the Federal Advisory Committee Act, that it may be necessary to close portions of this meeting to public attendance to protect proprietary information. The authority for such closure is Exemption (4) to the Sunshine Act, 5 U.S.C. 552b(c)(4).

Dated: March 30, 1982.

John C. Hoyle,

Advisory Committee Management Officer.

(FR Doc. 82-8874 Filed 4-3-82; 9:43 am)
BILLING CODE 7890-01-8

(Docket Nos. STN 50-528, STN 50-529, and STN 50-530)

Arizona Public Service Co., et al. and Palo Verde Nuclear Generating Station, Units 1, 2, and 3; Issuance of Amendments to Construction Permits

Notice is hereby given that the Nuclear Regulatory Commission (the Commission) has issued Amendments No. 3 to Construction Permit Nos. CPPR-141, CPPR-142, and CPPR-143. The amendments add M-S-R Public Power Agency as a co-owner and reflect a

TENTATIVE SCHEDULE FOR THE ACRS WOLF CREEK SUBCOMMITTEE
OPERATING LICENSE MEETING

APRIL 21 THROUGH 22, 1982, EMPORIA, KANSAS

April 21, 1982

Name

- | | | |
|-----------|--|--|
| 7:30 a.m. | <u>TOUR</u> leaves Emporia, Kansas in bus and travels to Wolf Creek for site tour with utility (approximately 40 miles away), box lunch during return to Emporia | |
| 1:00 p.m. | <u>INTRODUCTION BY SUBCOMMITTEE CHAIRMAN</u> | J. Ray |
| 1:05 p.m. | <u>INTRODUCTION BY NRC STAFF</u>

- Overview of OL review
- Any dissenting staff technical opinions
- I&E summary of noncompliance and non-conformance during construction (GE 4160V switchgear terminal lugs) | J. Hopkins, T. Vandel, NRC |
| 1:20 p.m. | <u>INTRODUCTION BY APPLICANT</u>

- Overview of plant and site
- Construction schedule, estimated dates of fuel loading and commercial operation, schedule and description of start-up tests | G. P. Rathbun,
Manager Licensing
G. L. Koester
Vice President - Nuclear |
| 1:30 p.m. | <u>ORGANIZATION AND MANAGEMENT</u>

- Corporate and operational management experience levels
- Staff buildup - percentage of engineering and management buildup
- SNUPPS organization
- Exchange of information
- Utility offsite and onsite technical capability organization, Compliance with NUREG-0731, "Management Structure and Technical Resources"
- Plans for independent audit, conformance of as-built plant with design, Assurance of no QA/QC lapses | G. L. Koester |

WOLF CREEK ACRS SUBCOMMITTEE

ORGANIZATION AND MANAGEMENT (continued)

- Operations Organization T. D. Keenan, Director
Nuclear Operations
 - Plant and industry operating experience, Owner's Group discussion
 - Uses of contractor personnel
 - Criterion used to determine the operating organizations' ability to assume control of plant from startup groups and contractors
- Nuclear Plant Engineering Organization M. L. Johnson, Manager
Nuclear Plant Engineering
- Nuclear Services Organization R. C. Hagan,
Manager Nuclear Services
- Nuclear Safety Review Committee
- Quality Assurance Organization E. W. Creel, Manager
Quality Assurance

2:35 p.m. BREAK

2:50 p.m. OPERATIONS STAFFING AND TRAINING

- Plant management chain of command F. T. Rhodes,
Plant Superintendent
- Current status of Operations staffing-percentage complete and experience level
- Selection of operators and maintenance personnel
- Plant communications - normal operations, maintenance, refueling, outages, and emergencies (How are routine and emergency instructions handled between unit operators and auxiliary unit operators?)
- Plant Safety Review Committee
- Uses of contractor personnel
- Uses of STA from utility perspective R. C. Coulthard,
Manager Nuclear Training
T. D. Keenan
- Feedback to operators, STAs, and others of plant and industry experience D. R. Smith,
Plant Support Supervisor

WOLF CREEK ACRS SUBCOMMITTEE

OPERATIONS STAFFING AND TRAINING (continued)

- Training for operators and maintenance personnel D. R. Smith
 - Uses of simulators in training program R. C. Coulthard
 - Training for serious accidents, DBA and beyond DBA
- 4:05 SEISMIC DESIGN OF PLANT AND EQUIPMENT Phylis Sobel, NRC/
Compliance with 10 CFR 100 Appendix A Candace Sprout,
and Conformance with Regulatory Guide Technical Staff Engineer
1.60, SSE Design Spectrum
- 4:50 CONTROL ROOM
- Design J. M. Pippin, Manager
Instrumentation & Controls
 - How would control room operators recognize instrument failures?
 - Habitability of control room for accidents beyond DBA
 - Description of Remote Shutdown Panel including the ability to withstand a single, random failure in the instruments and controls from the remote panel or in the systems themselves
 - Can plant be brought to "hot standby" or "cold shutdown" with equipment independent of control room instrumentation?
 - Human factors review J. M. McKinstry,
Operations Coordinator
- 5:30 p.m. INSTRUMENTATION TO FOLLOW THE COURSE
OF A SERIOUS ACCIDENT INCLUDING INADEQUATE
CORE COOLING Conformance with Regulatory
Guide 1.97 J. M. Pippin
- 5:45 ADJOURN

WOLF CREEK ACRS SUBCOMMITTEE

April 22, 1982

NAME

8:30 a.m.	<u>INTRODUCTION BY SUBCOMMITTEE CHAIRMAN</u>	J. Ray
8:35 a.m.	<u>OPEN ITEMS FROM THE SER</u> Presentation by NRC staff for each open item followed by applicant's response	J. Hopkins/G. P. Rathbun
9:20 a.m.	<u>SUMMARY BY NRC STAFF OF CONFIRMATORY ISSUES</u> and Applicant's Response	
9:50 a.m.	<u>SUMMARY BY NRC STAFF OF LICENSING CONDITIONS</u> and Applicant's Response	
10:20 a.m.	<u>RADIATION PROTECTION PROGRAM</u> Measures taken to reduce dosage, specific applications of ALARA, and benefits from other pertinent experience.	R. F. Lewis, Supervisor Radiological/Environmental Assessment
10:30 a.m.	<u>BREAK</u>	
10:45 a.m.	<u>PREPARATION OF EMERGENCY OPERATING PROCEDURES</u> including procedures beyond DBA	J. A. Zell, Operations Supervisor
11:00 a.m.	<u>EMERGENCY PLANNING</u> - Role and coordination with FEMA and state - Emergency support facilities - Population growth and affect on evacuation times	R. F. Lewis
11:30 a.m.	<u>AC/DC POWER RELIABILITY</u> Station blackout, scope of grid stability studies, compliance with NUREG-0666 and consideration of recommendations.	L. D. Morgan, Senior Engineer/J. A. Zell
11:45 a.m.	<u>LUNCH</u>	
12:45 p.m.	<u>SYSTEMS INTERACTIONS</u> , including fire protection and internal flooding, interactions between control and safety-related systems, plan for the performance of a Probabilistic Risk Assessment (PRA), - Failure modes and effects analysis	G. P. Rathbun

WOLF CREEK ACRS SUBCOMMITTEE

1:15 p.m.	<u>NRC STAFF POSITION ON HYDROGEN CONTROL IN LARGE DRY CONTAINMENTS - EQUIPMENT QUALIFICATION</u>	J. Hopkins
1:35 p.m.	<u>INSTRUCTIONS TO APPLICANT</u> Full committee presentations	J. Ray
2:05 p.m.	<u>ADJOURN</u>	

MEETING DATE: APRIL 21-22, 1982

ATTACHMENT C

SUBCOMMITTEE MEETING: WOLF CREEK - OPERATING LICENSE

LOCATION: EMPORIA, KANSAS

P/S
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Pg 1 of 5

ATTENDANCE LIST

PLEASE
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	NAME	AFFILIATION
1.	- RAY	AERS
2.	W. HOFF	AERS
3.	J. BUCK	AERS CONSULTANT
4.	G. - [unclear]	
5.	J. MORGAN	
6.	M. - [unclear]	
7.	D. HIGGINS	NEED STAFF
8.	P. MORGAN	
9.	T. E. VANDER	Senior Resident Insp. W.P. RTV
10.	G. E. EDISON	NRC
11.	Phyllis Sebel	NRC
12.	Frank Weiland	Kansas Corporation [unclear]
13.	Glenn P. [unclear]	Kansas Corporation [unclear]
14.	Michael D. Hall	KG&E
15.	T. E. HAMMAN	KEPCO
16.	DT McPHERSON	KCP L Co
17.	Wilson K. Cardman	KG&E Co.
18.	Charles Ross	KEPCO
19.	R. L. STRIGHT	SNUPPS STAFF
20.	[unclear]	KG&E
21.	THOMAS O. KEENAN	KG&E
22.	Gene P. Rathbun	KG&E
23.	GLENN L. KOESTER	KG&E
24.	MELVIN L. JOHNSON	KG&E

MEETING DATE: APRIL 21-22, 1982

SUBCOMMITTEE MEETING: WOLF CREEK - OPERATING LICENSE

LOCATION: EMPORIA, KANSAS

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2.	James M. McKinstry	KG&E
3.	JACK M. PIPPIN	KG&E
4.	Diane B. Smith	KG&E
5.	Richard Coulthard	Kansas Gas & Elec.
6.	Farrist T. Rhodes	Kansas Gas & Elect
7.	Earl W. Creel	Kansas Gas & Elect. Co
8.	David H. Rawlins	Westinghouse
9.	SAMUEL D. PHILLIPS	Westinghouse
10.	FRANCIS SCAPELLATO	WESTINGHOUSE
11.	CARL HIAST	WESTINGHOUSE
12.	JIM CERMAK	SNUPPS STAFF
13.	FRANK SCHWOERER	SNUPPS STAFF
14.	DONALD F. SCHWELL	(Union) Electric Co. - St. Louis, Mo
15.	Alan C. Passwater	Union Electric Co. - St. Louis, Mo.
16.	Bill RUDOLPH	KG&E
17.	Ry. Lewis	KC&E
18.	Richard TORRILL	KC&E
19.	DAVA CRAWFORD	KANSAS CITY POWER & LIGHT CO.
20.	J. L. Miller	Kansas City Power & Light Co
21.	Richard Flannigan	Kansas City Power & Light Co.
22.	Geoff Young	Water Control Board
23.	Wanda Christy	Daily Regulation
24.	H. A. PETRICK	SNUPPS STAFF

MEETING DATE: APRIL 21-22, 1982

SUBCOMMITTEE MEETING: WOLF CREEK - OPERATING LICENSE

LOCATION: EMPORIA, KANSAS

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1. Barry Haden	Wichita EAGLE-Beacon
2. Gary L. Fouts	Kansas Gas & Electric
3. GOPALACHARYA V KOMANDURU	Sargent & Lundy
4. Lawrence L. Holish	Sargent & Lundy Engrs.
5. Charles Scawthorn	Dames & Moore
6. DAVID F FENSTER	DAMES & MOORE
7. JOSEPH H. SMITH	BECHTEL Power Corp.
8. JOHN C. MESMERINGER	WESTINGHOUSE ELECTRIC CO
9. Glenn E. Lang	Westinghouse Electric Corp
10. Rich Mark	Westinghouse Electric Corp
11. Donald W Prigel	Kansas Gas & Electric
12. William G. Eales, Jr.	Kansas Gas & Electric
13. Norm S. Hill	
14. C. F. RETONDO	BECHTEL Power Corp.
15. ROBERT L. BLODNIKAZ	BECHTEL Power Corp.
16. Britt McKinney	KG+E
17. Gary D Boyer	"
18. DERRICK	"
19. John A. BAILEY	"
20. Lee A Sherman	Pio Nechar Citizen
21. WILLIAM B. NORTON	KG+E
22. Bill Burke	KG+E
23. Michael M. Nichols	KG+E
24. C. MICHAEL ESTES	KG+E

MEETING DATE: APRIL 21-22, 1982

SUBCOMMITTEE MEETING: WOLF CREEK - OPERATING LICENSE

LOCATION: EMPORIA, KANSAS

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NAME	AFFILIATION
1. [unclear]	K G + E
2. J. LYNDON BLACKWELL	K G + E
3. DENNIS GROVE	Bechtel
4. F.M. Raddy	Bechtel
5. JOHN S PREBILA	BECHTEL
6. PATRICK A. WARD	BECHTEL
7. B. L. MEXERS	Bechtel
8. KENNETH LGE	BECHTEL
9. DAVID C. GARDNER	Bechtel
10. James A Zell	Kans Gas & Electric
11. Karl E. Drehobl	Consumers Power Company
12. Gregory Taylor	League of Women-Voters
13. Lois Smith	OBSR
14. Shawn Smith	"
15. Julia Rhoads	"
16. MAURICE E. CLARK	KANSAS GAS & ELECTRIC CO
17. John W. Johnson	Kansas Gas & Electric Co
18. MATT BROWN	Emporia Gazette
19. Nancy Borst	Topeka Capital Journal
20. S Lynn Anthony	observer
21. Jack E. Scott	County Clerk Coffey County
22. Bill Williams	Coffey County Commissioner
23. Michael A. Stewart	K G + E
24. J. W. SWIGGER	WESTINGHOUSE ELECTRIC

MEETING DATE: APRIL 21-22, 1982

SUBCOMMITTEE MEETING: WOLF CREEK - OPERATING LICENSE

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2.	LES MORGAN	KG&E
3.	ED TARKER	KG&E
4.	James Wuckoff	F.S.U.
5.	Arthur Small	KG&E
6.	Chuck Gukeisen	KG&E
7.	James Clarke	student
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Attendances List

Name	Affiliation
S Ray	ACKS
W Kerr	/
J Buck	ACKS Consultant
D Duce	ACKS Staff
T [unclear]	/
T. E. Vandell	NRC RIV. SRI.
G. E. EDISON	NRC
B. J. YOUNGBLOOD	NRC
Jon B. Hopkins	NRC
Michael D. Hall	KG&E
R. L. STRIGHT	SNUPPS STAFF
Robert Hagan	KG&E
Ray [unclear]	KG&E
Richard Terrell	KG&E
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James A Zell	KG&E
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CARL HIRST	WESTINGHOUSE
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FRANK SCHWOEBER	SNUPPS STAFF

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Attendance List

Name	Affiliation
DANA CRAWFORD	KANSAS CITY POWER & LIGHT CO
J.L. Miller	KANSAS CITY POWER & LIGHT CO
John M. Simpson	attorney for intervenors.
N.A. PETRICK	SNUFFS STAFF
Richard Flannigan	Kansas City Power & Light Co.
Edward Peterson	Kansas Corporation Commission
Gary Haden	Wichita Eagle-Beacon
Fred Young	Yates Center News
Les Morgan	KG&E
JACK PIPPIN	KG&E
Mary Ann Salava	releasing intervenors
Nancy Borst	Topeka Capital-Journal
J. T. E. HAMMAN	KEPCO
Karl E Drehsel	Consumers Power Company
Bill Rudolph	KG&E
BRITT MCKINNEY	KG&E
JOHN A. BAILEY	KG&E
Donald W Prigel	KG&E
Lyle Koerper	KG&E
MAURICE E. CLARK	KG&E
Walt Brown	Empire Gazette
Julius Rhodes	disvr
Arthur Smith	KG&E
Jim Wyckoff	E.S.U.
Duane R Smith	KG&E
C. Michael Estes	KG&E

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Attendance List

Name	Affiliation
Gary L Fouts	KG & E
Michael A. Stewart	KG & E
Bill Burke	"
Mike Nichols	KG & E
WILLIAM B. NORTON	KG & E
MICHAEL E. HAWK	KG & E
F. W. THOMAS	BECHTEL
L. F. ROTONDO	BECHTEL
C. LYNDIN BLACKWELL	KG & E
James M. McKinstry	KG & E
Gary D Boyer	"
ED TARVER	"
J. SWIGGER	WESTINGHOUSE ELECTRIC
J. A. Smith	BECHTEL
David T. Nasda	Bechtel
Dick Coulthard	Kansas Gas & Ele.
Earl W. Cress	KG & E
William G. Eales, Jr.	KG & E
Alan C. Passwater	Union Electric
F.M. Roddy	Bechtel
Dennis Grove	Bechtel
PATRICK A. WARD	BECHTEL
JOHN S. PREBULA	Bechtel
CANDACE SPROUT	KG & E
Chuck Gulkeisen	KG & E