



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

OCT 05 1978

Docket Nos. STN 50-482, STN 50-483, STN 50-484,
STN 50-485 and STN 50-486

MEMORANDUM FOR: Distribution

FROM: Emanuel A. Licitra, Project Manager, Light Water Reactors
Branch No. 3, Division of Project Management

SUBJECT: PROJECT CRITIQUES FOR THE RADIOLOGICAL REVIEW OF THE
CONSTRUCTION PERMIT APPLICATIONS FOR THE FOUR SNUPPS
PLANTS (CALLAWAY, WOLF CREEK, STERLING AND TYRONE)

In accordance with PM Operating Procedure 220, "Preparation of Project Critiques, dated June 6, 1977, the enclosed critiques have been prepared for the NRC Construction Permit review of the four Standardized Nuclear Unit Power Plant System (SNUPPS) duplicate plants (Callaway Plant, Units 1 and 2, Wolf Creek Generating Station, Unit 1, Sterling Power Project, Nuclear Unit 1 and Tyrone Energy Park, Unit 1). Each unit of these four plants incorporates by reference a Westinghouse four loop pressurized water reactor (RESAR-3 Consolidated Version) which will be designed for operation at 3425 thermal megawatts with a net electrical output of approximately 1150 electrical megawatts.

Enclosure 1 provides a summary critique for the Construction Permit review of the four plants. Enclosures 2 through 5 provide detailed critiques for each of the four plants.

A handwritten signature in cursive script that reads "E. A. Licitra".

Emanuel A. Licitra, Project Manager
Light Water Reactors Branch No. 3
Division of Project Management

Enclosures:
As Stated

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ENCLOSURE 1

SUMMARY CRITIQUE FOR THE CP SAFETY REVIEW OF THE

SNUPPS STANDARD PLANTS

CALLAWAY PLANT, UNIT NOS. 1 AND 2 (DOCKET NOS. STN 50-483 AND STN 50-486)

WOLF CREEK GENERATING STATION, UNIT NO. 1 (DOCKET NO. STN 50-482)

STERLING POWER PROJECT, NUCLEAR UNIT NO. 1 (DOCKET NO. STN 50-484)

TYRONE ENERGY PARK, UNIT NO. 1 (DOCKET NO. STN 50-484)

Introduction

The four Standardized Nuclear Unit Power Plant System (SNUPPS) standard plant applications were submitted during April 1974 for review under the Commission's standardization policy using the duplicate plant option. This option allows for a simultaneous review of the safety-related parameters of a limited number of duplicate plants which are to be constructed within a limited time span at a multiplicity of sites.

The names of the facilities, the respective applicants and the planned location of each plant, are as follows:

- (1) Callaway (two units), by the Union Electric Company, to be located in Callaway County, Missouri
- (2) Wolf Creek (one unit), by the Kansas Gas & Electric Company and the Kansas City Power & Light Company, to be located in Coffey County, Kansas
- (3) Sterling (one unit), by the Rochester Gas & Electric Corporation, et al., to be located in Cayuga County, New York
- (4) Tyrone (one unit), by the Northern States Power Company, et al., to be located in Dunn County, Wisconsin

A common SNUPPS Preliminary Safety Analysis Report (PSAR) was submitted in support of the applications for the four facilities. The SNUPPS PSAR describes the standard portion of each plant, including the nuclear steam supply system and associated support systems and structures up to and including the steam and power conversion system. The nuclear steam supply system for each unit will be a four loop pressurized water reactor, rated at 3425 thermal megawatts (1150 electrical megawatts) to be supplied by the Westinghouse Electric Corporation (RESAR-3 Consolidated Version). The architect/engineer for the standard portion of the SNUPPS plants outside the scope of the nuclear steam supply system is the Bechtel Power Corporation. The General Electric Company will supply the turbine generator for each unit.

A separate PSAR Addendum Report was also submitted in support of each of the four applications. The PSAR Addendum Report describes the portions of each plant outside the scope of the SNUPPS PSAR (i.e., site-related and applicant-related aspects, such as offsite power, ultimate heat sink and emergency planning).

Since the standard portion of each plant is identical and is described in a single document (SNUPPS PSAR), a single review of this portion was performed which was applicable to all four SNUPPS applications. Therefore, the safety review of each SNUPPS plant consisted of a review of the SNUPPS PSAR plus the review of the PSAR Addendum Report (i.e., the remaining portions of a PSAR) for that plant. Also, the review of the nuclear steam supply system scope (RESAR-3, Consolidated Version) in the standard portion of the SNUPPS plants was limited to those areas which had not been resolved during previous reviews of RESAR-3.

Callaway

The application and the PSAR for Callaway were docketed on June 21, 1974. An LWA was issued on August 14, 1975, about 1-1/2 months beyond the original target date. The CP was issued on April 16, 1976, about 2-1/2 months beyond the original target date.

The safety portion of the review for Callaway was completed (issuance of Supplement No. 2 to the SER) about five months after the original target date. The primary reasons for the slip were due to (1) a delay of about two months in issuing the SER (because of late review inputs and the time required to resolve open issues) and (2) a delay of about three months to complete the issuance of the supplements (because of the then new Appendix I requirements).

After completion of the safety review, there was an improvement in the schedule of about 2-1/2 months (thus reducing the overall delay to about 2-1/2 months) before the CP was issued. The primary reason for the improvement was due to the fact that the safety hearing was able to start after issuance of Supplement No. 1 to the SER, which concluded on all matters except for Appendix I.

The delays which occurred in the review of the Callaway application did not impact the applicant's construction program since the LWA and the CP were issued in a time frame which was compatible with the applicant's construction schedule.

Wolf Creek

The application and Environmental Report for Wolf Creek were docketed on May 17, 1974 and the PSAR was docketed on June 21, 1974. An LWA was issued on January 24, 1977, about 20 months beyond the original target date. The CP was issued on May 17, 1977, about 15-1/2 months beyond the original target date.

The safety portion of the review for Wolf Creek was completed (issuance of Supplement No. 2 to the SER) about 5-1/2 months after the original target date. The primary reasons for the slip were due to (1) a delay of about three months in issuing the SER (because of late review inputs and LPM involvement in the preparation of the Callaway SER) and (2) a delay of about 2-1/2 months to complete the issuance of the SER supplements (because of the then new Appendix I requirements).

After completion of the safety review, there was an additional delay of about ten months (for a total delay of 15-1/2 months) before the CP was issued. The primary reasons for this delay were due to (1) an extended combined hearing due to environmental issues, which accounted for about 1-1/2 months of the delay, (2) a 4-1/2 months moratorium on licensing actions (due to the "Table S-3" issue), and (3) an additional delay of about four months after the moratorium due to the hearing being reopened on the issue of financial qualifications (in order to consider the effect of a Missouri proposition, which was passed in the November 1976 elections, prohibiting the use of construction work in progress in the rate base of Missouri utilities). At the time the Board reopened the hearing on financial qualifications, it also issued a favorable Partial Initial Decision on all other matters. This decision permitted the issuance of an LWA, thus minimizing the impact on the applicants' construction schedule.

Sterling

The application and the PSAR for Sterling were docketed on June 21, 1974. The CP was issued on September 1, 1977, about 19 months beyond the original target date. An LWA was not issued since it was neither requested nor required.

The safety portion of the review for Sterling was completed (issuance of Supplement No. 1 to the SER) about 7-1/2 months after the original target date. The primary reasons for the slip were due to (1) a delay of about three months in issuing the SER (because of late applicant responses, late review inputs, and LPM involvement in the preparation of the Callaway SER) and (2) a delay of about 4-1/2 months in issuing the supplement (because of the then new Appendix I requirements and the need to evaluate updated financial information to account for the addition of new applicants).

After completion of the safety review, there was an additional delay of about 11-1/2 months (for a total of 19 months) before the CP was issued. The primary reasons for this slip was due to (1) a delay in the start of the combined hearing (due to late applicant inputs for the environmental review) and an extended hearing (due to environmental issues), which accounted for about 3-1/2 months of the delay, (2) a delay of about three months (by agreement among all parties) for completion of the submittal of the proposed findings of fact for the combined hearing until after issuance of the interim rule regarding "Table S-3", and (3) an additional delay of about five months (by agreement among all parties) to present an assessment to the Board to show that the Sterling site is acceptable with or without cooling towers for the plant.

The delays which occurred in the review of the Sterling application did not impact the applicants' construction schedule since the CP was issued prior to the planned start of construction. In addition, at the time of CP issuance, the applicants could not have started construction since they did not have the necessary State of New York approvals to permit construction work.

Tyrone

The application and the PSAR for Tyrone were docketed on June 21, 1974. The CP was issued on December 27, 1977, about 23 months beyond the original target date. An LWA was not issued since it was neither requested nor required.

The safety portion of the review for Tyrone was completed (issuance of Supplement No. 3 to the SER), about 15 months after the original target date. The primary reason for the slip was due to applicant delays in (1) responding to our requests (about 1-1/2 months) and (2) resolving

three open issues regarding implementation of the quality assurance program (about five months). In addition, the safety review schedule was revised at the applicants' request, because of a three year delay in the construction schedule, resulting in a slip of about four months from the original target date for completion of the safety review. Other delays included (1) a slip of about two months to complete our evaluation of financial qualifications (because of updated information to account for the addition of new applicants) and (2) a slip of about 2-1/2 months to perform a reevaluation of the ECCS system performance (to account for recent Westinghouse data on this matter).

After completion of the safety review, there was an additional delay of about eight months (for a total of 23 months) before the CP was issued. The reason for this delay was due to the fact that the environmental review was delayed (because of a revised Environmental Report submitted 15 months after the application was docketed to reflect a one unit plant in place of the two unit plant originally submitted). This resulted in the Board's Initial Decision on environmental matters being issued about eight months after the Board's Partial Initial Decision on safety matters.

The delays which occurred in the review of the Tyrone application did not impact the applicants' construction schedule since the CP was issued prior to the planned start of construction. In addition, at the time of CP issuance, the applicants could not have started construction since they did not have the necessary State of Wisconsin approvals to permit construction work.

Observation on Standardization

One observation can be made regarding the use of standardization on the SNUPPS plants. Although there were benefits realized by the applicants (reduced design costs) and the staff (reduced manhour review requirements) by the use of the SNUPPS standard plant design, there were no schedule benefits realized for the CP review of Wolf Creek, Sterling and Tyrone since the environmental review for these applications became controlling. Therefore, it would appear, based on the results of the critiques for the CP safety review of Wolf Creek, Sterling and Tyrone that, in order for utilities to obtain real schedule benefits from the standardization program, they should also make use of an early site review program in addition to using a standard plant design.

ENCLOSURE 2

DETAILED CRITIQUE FOR CP SAFETY REVIEW OF CALLAWAY

PHASE 1

PSAR DOCKETED (MILESTONE 01-6) THROUGH ISSUANCE OF FORMAL STAFF POSITIONS

(MILESTONE 14)

<u>Original Targeted Span, Months</u>	- 6.9
<u>Actual Span, Months</u>	- 7.9
<u>Magnitude of Slip, Months</u>	- 1.0

The primary reason for the one month slip in issuing the staff positions was due to late inputs from several review branches. The late inputs, in turn, were due to the heavy case work load which was common, and which also affected the review schedules for other applications, in that period of time. For two of the review branches, the inputs for the standard (SNUPPS PSAR) portion of the application were delayed by one month, which also affected the review schedules for the other three SNUPPS applications (Wolf Creek, Sterling and Tyrone) accordingly. For three of the review branches, the site-related inputs were delayed by 1.2 months.

The impact of the late inputs was minimized since the staff positions were issued to the applicant, as the inputs became available. The bulk of the staff positions were issued 0.2 month after the original target date, while the final two submittal was made within one month after the original target date. The applicant also minimized the impact of the late inputs by completing the submittal of its responses 0.7 months after the original target date.

PHASE 2

FORMAL STAFF POSITIONS ISSUED TO APPLICANT (MILESTONE 14) THROUGH FINAL SUPPLEMENT (NO. 2) TO SAFETY EVALUATION REPORT ISSUED (MILESTONE 28)

<u>Original Targeted Span, Months</u>	- 7.4
<u>Actual Span, Months</u>	- 11.2
<u>Magnitude of Slip, Months</u>	- 3.8

The slip in issuing the final supplement to the SER was due to a one month slip in issuing the SER and an additional slip of 2.8 months in issuing the final supplement.

The reason for the one month slip in issuing the SER was due to a management decision to delay issuance of the SER until the number of outstanding issues was significantly reduced. This action resulted in the number of outstanding issues being reduced from 24 to 11. However, while the staff and the applicant worked toward the resolution of these issues, the management and OELD reviews of the draft SER progressed.

The reason for the 2.8 month slip in issuing the final supplement to the SER was due to the necessity to issue two supplements. Supplement No. 1 was issued about 0.8 month after the then scheduled date for a final supplement due to late inputs from several review branches. Supplement No. 1 presented the resolution of all the remaining outstanding issues except for Appendix I which became part of the regulations at the time the SER was issued. Appendix I required that all plants demonstrate compliance with this regulation which affected the review schedule, in varying degrees, for many plants under review at that time. Supplement No. 2, which presented the resolution of the Appendix I issue, was issued two months after Supplement No. 1.

The actions taken by the Callaway applicant and the staff to minimize the impact of the above slips are as follows. Initially, the SNUPPS applicants and the staff held two separate meetings for the purpose of resolving many of the outstanding issues in the review of the SNUPPS PSAR; the SNUPPS applicants expedited the submittals to document the resolution of most of the issues, thus permitting the issuance of the SER with minimum delay. The issuance of Supplement No. 1 permitted the safety phase of the hearing to begin. In addition, the Callaway applicant expedited its submittal of the information required by Appendix I and the staff, in turn, gave high priority to the review of the submitted information, thus minimizing the delay in issuing Supplement No. 2.

A problem in the review of Callaway, which all cases have to face, is whether to issue an SER with a large number of outstanding issues. In the case of Callaway, it was decided not to issue the SER until the number of outstanding issues was significantly reduced. In retrospect, this decision resulted in minimal impact on the SER issuance date, expedited the resolution of outstanding issues, and, in the long run, had a beneficial effect on the overall schedule. This decision also benefited the safety review schedule for Wolf Creek, Sterling and Tyrone since most of the outstanding issues were in the SNUPPS PSAR scope. It is recommended that this practice be used on all case work.

PHASE 3

SUPPLEMENT NO. 2 TO SAFETY EVALUATION REPORT ISSUED (MILESTONE 28)

THROUGH PROSPECTIVE DECISION DATE (MILESTONE 43)

<u>Original Targeted Span, Months</u>	- 5.1
<u>Actual Span, Months</u>	- 2.8
<u>Magnitude of Slip (Improvement), Months</u>	- (2.3)

The primary reason for the 2.3 month improvement in issuing the CP was due to the fact that the safety phase of the hearing was started after the issuance of Supplement No. 1 to the SER; Supplement No. 2, covering the Appendix I evaluation, was issued two months later, or about 1.5 months after the start of the safety phase of the hearing. The remaining 0.3 month improvement was due to the fact that the safety hearing took less time to complete than the time span allotted for completion.

ENCLOSURE 3

DETAILED CRITIQUE FOR CP SAFETY REVIEW OF WOLF CREEK

PHASE 1

PSAR DOCKETED (MILESTONE 01-6) THROUGH ISSUANCE OF FORMAL STAFF POSITIONS

(MILESTONE 14)

Original Targeted Span, Months - 6.9

Actual Span, Months - 8.0

Magnitude of Slip, Months - 1.1

The primary reason for the 1.1 month slip in issuing the staff positions was due to late inputs from several review branches, as discussed in the critique for Callaway (Enclosure 2). For two of the review branches, the site-related inputs were delayed by 1.2 months.

The impact of the late inputs was minimized since the staff positions were issued to the applicants, as the inputs became available. The bulk of the staff positions were issued 0.2 month after the original target date, while the final submittal was made within one week after receipt from the reviewers.

PHASE 2

FORMAL STAFF POSITIONS ISSUED TO APPLICANT (MILESTONE 14) THROUGH
SUPPLEMENT NO. 2 TO SAFETY EVALUATION REPORT ISSUED (MILESTONE 28)

Original Targeted Span, Months - 7.4

Actual Span, Months - 11.7

Magnitude of Slip, Months - 4.3

The slip in issuing Supplement No. 2 to the SER was due to a 1.8 month slip in issuing the SER, a slip of 1.6 months in issuing Supplement No. 1 to the SER and an additional slip of 0.9 month in issuing Supplement No. 2 to the SER.

The primary reason for the slip in issuing the SER was due to the fact that the draft SER was delayed 1.3 months to permit the LPM to prepare the draft SER for the lead SNUPPS plant (Callaway) which, at the time, had the same target date for SER issuance as for the Wolf Creek SER. During the time that the draft SER for Callaway was being prepared, most of the outstanding issues in the review of the SNUPPS PSAR, which related to all the SNUPPS applications, including Wolf Creek, were resolved. Other delays included a 0.3 month slip in receiving SER inputs from several review branches (due to heavy case work loads) and a 0.2 month slip in completing the management review cycle for the draft Wolf Creek SER (due to unadequate time allotted for the cycle).

Supplement No. 1 to the SER was delayed 1.6 months in an attempt to include a completed evaluation of the plant's conformance with the (then) new Appendix I regulation. Supplement No. 1 was issued prior to the start of the combined hearing and concluded on all matter except for Appendix I. Our completed Appendix I evaluation was included in Supplement No. 2, which was issued 0.9 month later or about 0.5 month after the start of the hearing.

The actions taken by the Wolf Creek applicants and the staff to minimize the impact of the above slips are as follows. Initially while the draft SER for Callaway was in preparation, the SNUPPS applicants and the staff held two separate meetings for the purpose of resolving many of the outstanding issues in the review of the SNUPPS PSAR; the SNUPPS applicants expedited the submittals to document the resolution of most of the issues thus minimizing further impact on the Wolf Creek SER issuance date. The issuance of Supplement No. 1 permitted the safety phase of the hearing to begin. In addition, the Wolf Creek applicants expedited the submittal of the information required by Appendix I and the staff, in turn, gave high priority to the review of this information, thus minimizing the delay in issuing Supplement No. 2.

A third (final) supplement was issued about 9-1/2 months after Supplement No. 2. Supplement No. 3 presented a re-evaluation of the analysis of the emergency core cooling system to account for the effects of (then) recent Westinghouse data on this matter, which became known after the start of the safety phase of the hearing. Issuance of the third supplement at this late date had no impact on the licensing review schedule since the environmental phase of the hearing was controlling the schedule at that time.

PHASE 3

SUPPLEMENT NO. 2 TO SAFETY EVALUATION REPORT ISSUED (MILESTONE 28)
THROUGH PROSPECTIVE DECISION DATE (MILESTONE 43)

<u>Original Targeted Span, Months</u>	- 5.1
<u>Actual Span, Months</u>	- 15.2
<u>Magnitude of Slip, Months</u>	- 10.1

The primary reasons for the 10.1 month slip in issuing the CP were due to the following factors:

- (1) An extended combined hearing (5 months) because of environmental issues, which accounted for about 1-1/2 months of the slip;
- (2) The moratorium (4-1/2 months) on licensing actions because of the "Table S-3" issue, which affected the review schedule in varying degrees for other applications under review at that time; and
- (3) The reopening of the hearing on financial qualifications because of the passage of a proposition in the Missouri elections of November 1976 which prohibits the inclusion of construction work in progress in the rate base of Missouri utilities. The hearing was reopened after the moratorium was lifted and accounted for four months of the slip.

The above delays were minimized by focusing NRC management attention on the environmental review process. In addition, after the moratorium on licensing actions was lifted, the Board issued a Partial Initial Decision on all matters except financial qualifications permitting the issuance of an LWA on January 24, 1977, about four months before the CP issuance date. (The LWA issuance date was about 20 months later than the original target date.)

ENCLOSURE 4

DETAILED CRITIQUE FOR CP SAFETY REVIEW OF STERLING

PHASE 1

PSAR DOCKETED (MILESTONE 01-6) THROUGH ISSUANCE OF FORMAL STAFF POSITIONS

(MILESTONE 14)

Original Targeted Span, Months - 6.9
Actual Span, Months - 8.1
Magnitude of Slip, Months - 1.2

There were two reasons for the 1.2 month slip in issuing the staff positions; one for the standard (SNUPPS PSAR) portion of the application, as discussed in the critique for Callaway (Enclosure 2), and one for the non-standard portion (site-related and applicant-related aspects).

For the non-standard portion of the application, the slip was primarily due to late responses by the applicants (one month delay) to first round questions. Two review branches also contributed to the slip by delaying staff position inputs an additional 0.3 month beyond the applicants' delay in responding to first round questions.

The impact of the late inputs and late responses was minimized since the staff positions were issued to the applicants, as the inputs became available. The bulk of the staff positions were issued 0.2 month after the original target date, while the final submittal was made within one week after receipt from the reviewers.

PHASE 2

FORMAL STAFF POSITIONS ISSUED TO APPLICANT (MILESTONE 14) THROUGH
SUPPLEMENT NO. 1 TO SAFETY EVALUATION REPORT ISSUED (MILESTONE 28)

Original Targeted Span, Months - 7.4
Actual Span, Months - 13.8
Magnitude of Slip, Months - 6.4

The slip in issuing Supplement No. 1 to the SER was due to a 1.8 month slip in issuing the SER and an additional slip of 4.6 months in issuing the supplement.

The primary reason for the slip in issuing the SER was due to the fact that the draft SER was delayed 1.5 months. Late inputs from several review branches (due to heavy case work loads) accounted for 0.8 months of the slip. An additional slip of 0.7 months was incurred to permit the LPM to prepare the draft SER for the lead SNUPPS plant (Callaway) which, at the time, had the same target date for SER issuance as for the Sterling SER. During the time that the draft SER for Callaway was being prepared, most of the outstanding issues in the review of the SNUPPS PSAR, which related to all the SNUPPS applications, including Sterling, were resolved. The remaining delay in issuing the SER was due to a 0.3 month slip in completing the management review cycle for the draft Sterling SER because of inadequate time allotted for the cycle.

The primary reasons for the 4.6 month slip in issuing Supplement No. 1 to the SER were due to (1) the requirement to demonstrate compliance with the (then) new Appendix I regulation (which affected the review schedule in varying degrees for many plants under review at that time) and (2) the need to review updated financial information from the applicants to reflect the addition of three other applicants which occurred after the issuance of the SER. The supplement was issued with no outstanding items three months before the start of the combined hearing.

A second (final) supplement was issued about 7-1/2 months after Supplement No. 1. Supplement No. 2 presented a re-evaluation of the emergency core cooling system to account for the effects of (then) recent Westinghouse data on this matter, which became known after the start of the combined hearing. Issuance of the second supplement at this late date had no impact on the licensing review process since the environmental phase of the hearing was controlling the schedule.

PHASE 3

SUPPLEMENT NO. 1 TO SAFETY EVALUATION REPORT ISSUED (MILESTONE 28)
THROUGH PROSPECTIVE DECISION DATE (MILESTONE 43)

Original Targeted Span, Months - 5.1
Actual Span, Months - 16.6
Magnitude of Slip, Months - 11.5

The primary reasons for the 11.5 month slip in issuing the CP were due to the following factors:

- (1) The safety review was completed before the environmental review and, as a result, the start of the combined hearing was delayed until three months after the safety review was completed;
- (2) An extended (four months) hearing mostly due to environmental issues;
- (3) A delay of three months (by agreement among all parties) for completion of the submittal of the proposed findings until after the interim rule regarding "Table S-3" was issued; and
- (4) A delay of five months (by agreement among all parties) to present an assessment to the Board of the impact of the Appeal Board ruling on Seabrook regarding once through cooling versus cooling towers (both the applicants and the staff concluded, and the Board affirmed, that a change to cooling towers would not alter the findings made for Sterling).

The Appeal Board ruling on Seabrook, as confirmed by the Commission on March 31, 1977, required that the CP hearing on Seabrook be reopened to assess if changing to cooling towers in lieu of once through cooling would impact on (1) the cost-benefit balance and (2) the site selection process. The basis for this decision was EPA's strong suggestion at the time that it would require cooling towers at Seabrook. Since Sterling appeared to be in the same situation, both the applicants and the staff agreed to present an assessment of these two factors before the Board to avoid a potentially similar ruling for Sterling.

Although this action delayed the issuance of the CP, it eliminated the potential for reopening the hearing on this matter after the CP was issued. This delay had no impact on the applicants' construction schedule since the CP was eventually issued prior to the applicants' start of construction date. In addition, at the time the CP was issued, the applicants could not have started construction since they did not have the necessary Certificate of Environmental Compatibility and Public Need from the State of New York.

ENCLOSURE 5

DETAILED CRITIQUE FOR CP SAFETY REVIEW OF TYRONE

PHASE 1

PSAR DOCKETED (MILESTONE 01-6) THROUGH ISSUANCE OF FORMAL STAFF POSITIONS

(MILESTONE 14)

Original Targeted Span, Months - 6.9

Actual Span, Months - 10.1

Magnitude of Slip, Months - 3.2

There were several reasons for the 3.2 month slip in issuing the staff positions. There was an initial delay of 0.6 month in completing the submittal of first round questions (Q-1) on the site-related aspects to the applicants because of late inputs from two of the review branches.

At this point in time, the applicants had announced a three year delay in the construction schedule of the first unit and an indefinite postponement in the construction of the second unit. As a result, after receipt of the Q-1's, the applicants requested that we revise our review schedule for the site-related portion of the application so as to be based on a non-accelerated review. (Since the site-related portion was docketed 2.3 months after the SNUPPS PSAR portion, the initial review schedule for Tyrone was based on an accelerated review of the site-related portion in order to catch up with the SNUPPS PSAR review.) The applicants stated that it would continue to maintain the review schedule for the SNUPPS PSAR which was common to the other three SNUPPS applications (Callaway, Wolf Creek and Sterling).

Subsequently, the applicants responded to the SNUPPS PSAR Q-1's on schedule but delayed the responses to the site-related Q-1's by two months (or an additional 1.4 months beyond the 0.6 month delay in receiving the Q-1's). As a result, a revised schedule was developed for the site-related portion of the application delaying the CP PDD date by four months.

The above schedule change, based on a non-accelerated review, revised the date for issuing staff positions on the site-related portions an additional 0.8 months beyond the two month slip already incurred. The remaining delay of 0.4 month was due to receiving late site-related inputs on staff positions from two of the review branches.

PHASE 2

FORMAL STAFF POSITIONS ISSUED TO APPLICANT (MILESTONE 14) THROUGH FINAL
SUPPLEMENT (NO. 3) TO SAFETY EVALUATION REPORT ISSUED (MILESTONE 28)

Original Targeted Span, Months - 7.4

Actual Span, Months - 19.2

Magnitude of Slip, Months - 11.8

The slip in issuing the final supplement (No. 3) to the SER was due to a 1.6 month slip in issuing the SER and an additional slip of 10.2 months in issuing the final supplement.

The primary reason for the 1.6 month slip in issuing the SER was due to the applicants' delay in responding to the site-related staff positions. Since a revised non-accelerated schedule was in effect at the time (see discussion above in Phase 1 evaluation) which allowed the applicants an additional 0.5 month to respond to site-related staff positions, the actual slip when compared to the revised schedule was only 1.1 months.

There were several reasons for the 10.2 month slip in issuing the final supplement to the SER. The bulk of the slip (9.6 months) was due to the necessity to issue three supplements, which are discussed below. The remaining 0.6 month of the slip was the result of the revised non-accelerated schedule in effect at the time (see discussion above in Phase 1 evaluation) which increased the Phase 2 span by this amount.

Supplement No. 1 was delayed 5.2 months due to the applicants' delay in providing the necessary information required to resolve three outstanding issues in the implementation of the quality assurance program. This supplement concluded on all matters except for financial qualifications.

Supplement No. 2, which concluded on the issue of financial qualifications, was issued 1.8 months after Supplement No. 1. Our evaluation of this issue was not included in the first supplement since the applicants submitted revised financial information during the preparation of Supplement No. 1 to reflect changes in ownership shares. Further, the applicants' submitted additional updated financial information after the issuance of Supplement No. 1 thus contributing to the delay in issuing Supplement No. 2.

Supplement No. 3, which was issued 2.6 months after the issuance of Supplement No. 2, addressed and concluded on a reanalysis of the ECCS system performance. This reanalysis was required to account for effects of (then) recent Westinghouse data on this matter which became known during the preparation of Supplement No. 2. This issue was identified as the only outstanding item in Supplement No. 2 and affected the review schedule for other Westinghouse plants under review at that time.

The staff minimized the impact of the above delays by expediting the review of the updated financial information, thus permitting the issuance of Supplement No. 2 eleven days after receipt of the latest updated financial information from the applicants. This permitted the safety phase of the hearing to start even though a re-evaluation of the ECCS system performance remained as an outstanding issue. After Supplement No. 3 was issued resolving this outstanding matter, the supplement was entered into the hearing record without the need for any further hearing sessions on safety matters.

PHASE 3

FINAL SUPPLEMENT (NO. 3) TO SAFETY EVALUATION REPORT ISSUED (MILESTONE 28)

THROUGH PROSPECTIVE DECISION DATE (MILESTONE 43)

Original Targeted Span, Months - 5.1

Actual Span, Months - 12.9

Magnitude of Slip, Months - 7.8

The primary reason for the 7.8 month slip in issuing the CP was due to the fact that the safety phase of the hearing was completed while the environmental review was still in progress.

Since the safety review of the application was completed several months before the FES was issued, all parties agreed to hold the safety phase of the hearing first. This resulted in a favorable Partial Initial Decision being issued by the Board on safety matters eight months prior to the Initial Decision on environmental matters.

None of the delays which occurred during the review of this application had any affect on the applicants' construction schedule since the CP was eventually issued prior to the applicants' start of construction date. In addition, at the time the CP was issued, the applicants could not have started construction since they did not have all of the necessary State of Wisconsin permits to start construction.