



South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

October 6, 2010
U7-C-STP-NRC-100221

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

South Texas Project
Units 3 and 4
Docket No. PROJ0772
Response to Request for Additional Information

Reference: Request for Additional Information Re: South Texas Project
Nuclear Operating Company Topical Report (TR) WCAP-17079P
Revision 0, "Supplement 3 to BISON Topical Report RPA 90-90-P-A
SAFIR Control System Simulator"(TAC NO. RG0012)

Attached are responses to NRC staff questions included the referenced letter. Attachments 1 thru 5 address the RAIs shown below:

RAI 15S01
RAI 36S01
RAI 39S01
RAI 40S01
RAI 41S01

There are no commitments in this letter.

If you have any questions, please contact me at (361) 972-7136, or Bill Mookhoek at (361) 972-7274.

TO/IO
NRO

STI 32761859

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 10/6/10



Scott Head
Manager, Regulatory Affairs
South Texas Project Units 3 & 4

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Attachments:

1. RAI 15S01
2. RAI 36S01
3. RAI 39S01
4. RAI 40S01
5. RAI 41S01

cc: w/o attachment except*
(paper copy)

Director, Office of New Reactors
U. S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

Regional Administrator, Region IV
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, Texas 76011-8064

Kathy C. Perkins, RN, MBA
Assistant Commissioner
Division for Regulatory Services
Texas Department of State Health Services
P. O. Box 149347
Austin, Texas 78714-9347

Alice Hamilton Rogers, P.E.
Inspection Unit Manager
Texas Department of State Health Services
P. O. Box 149347
Austin, Texas 78714-9347

*Steven P. Frantz, Esquire
A. H. Gutterman, Esquire
Morgan, Lewis & Bockius LLP
1111 Pennsylvania Ave. NW
Washington D.C. 20004

*Tekia Govan
*Ekaterina Lenning
Two White Flint North
11545 Rockville Pike
Rockville, MD 20852

(electronic copy)

*George F. Wunder
*Tekia Govan
*Ekaterina Lenning
Loren R. Plisco
U. S. Nuclear Regulatory Commission

Steve Winn
Joseph Kiwak
Eli Smith
Nuclear Innovation North America

Peter G. Nemeth
Crain, Caton & James, P.C.

Richard Peña
Kevin Pollo
L. D. Blaylock
CPS Energy

RAI 15S01**QUESTION:**

Since the topical report WCAP-17079-P is being reviewed using the standards described in NUREG-0800 (SRP) Section 15.0.2, "Review of Transient and Accident Analysis Methods", the subject of which is a transient evaluation model rather than an individual computer code, approval cannot be granted to SAFIR generically but only to an appropriately documented evaluation model employing SAFIR (e.g., BISON, SAFIR, and any other codes or procedures necessary to perform the complete analysis).

Among the other requirements of NUREG-0800, Section 15.0.2 Subsection II.1 requires that

[t]he submittal must identify the specific accident scenarios and plant configurations for which the codes will be used. The evaluation model documentation must be scrutable, complete, unambiguous, accurate, and reasonably self-contained.

WCAP-17079-P states that

SAFIR is capable of modeling control systems consistent with the provisions of CENPD-300-P-A" and also states "SAFIR is capable of modeling various types of transients which include, but not limited to, Load Rejection, Turbine Trip, Core Power or Pressure changes, and valve failures.

CENPD-300-P-A states in Table 1-1 that BISON is used in the Westinghouse reload methodology to analyze AOO fast transients. Section 7.4 of the same document lists the fast transients as:

- Generator Load Rejection Without Bypass
- Turbine Trip Without Bypass
- Feedwater Controller Failure - Maximum Demand
- Pressure Regulator Failure - Closed (BWR/6 only)

The material in WCAP-17079-P does not satisfy the requirements. First it addresses SAFIR and not the subject of the WCAP-17079-P – the evaluation model comprising BISON coupled with SAFIR (i.e., BISON-SAFIR). Secondly, it suggests an open-ended application rather than specifying the limits of applicability called for in the requirement. The response to RAI-15 neither identified a list of specific accident scenarios nor confirmed that the original scenario list described in CENPD-300-P-A would remain unaffected by the addition of SAFIR to the evaluation model.

State the set of transient events for which BISON-SAFIR will be used.

RESPONSE:

The original scenario events as described in CENPD-300-P-A are unchanged with the addition of WCAP-17079-P. The events in section 7.4 of CENPD-300-P-A are:

- Generator Load Rejection Without Bypass
- Turbine Trip Without Bypass
- Feedwater Controller Failure – Maximum Demand
- Pressure Regulator Failure – Closed (BWR/6 only)

These events will continue to be evaluated as outlined within CENPD-300-P-A.

RAI 36S01**QUESTION:**

WCAP-17079-P states in Section 3.10 that the “the available verified and validated basic components are listed in Table 3-2.” STP had been requested in RAI-36 to provide a list of those top-level systems that will be modeled using the newly integrated SAFIR capability in the evaluation model, and to state whether the toolbox of presently available SAFIR components as described in the LTR is sufficient to build models of those systems. STP’s response consisted only of four examples of systems that may be modeled using SAFIR. However, in order to perform an adequate review of the adequacy of the new evaluation model employing SAFIR, we require a comprehensive list of such systems in order to properly establish its scope of applicability. Therefore:

- a) For each individual system identified in RAI-16S001, state whether SAFIR and/or non-SAFIR capabilities in BISON are being used (either wholly or in part) to provide representation of that system.
- b) For each system identified in response to RAI-16S001 that will be modeled using BISON-SAFIR, state whether the components listed in Table 3-2 are sufficient to build the applicable models with BISON-SAFIR. If not, provide a supplement to Table 3-2 listing all required components.

RESPONSE:

- a) SAFIR will be used to support the modeling of the following top level ABWR systems:
 - Pressure Controller
 - Feedwater Controller
 - Recirculation Flow Controller
 - Reactor Protection System
 - High Pressure Core Flooder
 - Core Flow Measurement System
 - Water Level Measurement System
 - Adjustable Speed Drive

Each of the listed systems will be represented by both SAFIR and non-SAFIR BISON capabilities. The systems will represent the top level plant models described in the DCD.

- b) WCAP-17079-P Table 3-2 contains components sufficient to build models of all of the ABWR systems listed in part a) of this response.

RAI 39S01

QUESTION:

The response is acceptable, revise the LTR to reflect the RAI response.

RESPONSE:

The Licensing Topical Report will be updated 90 days following issuance of the Safety Evaluation Report and submitted to the NRC.

RAI 40S01**QUESTION:**

WCAP-17079P, Rev. 0, Table 3-2 just includes basic components. Some components used in section 6 for the model verification and validation are not included in Table 3-2. The applicant is requested to submit for review a complete list of components and as-built micros to be used for the SAFIR control systems.

RESPONSE:

There were two components in Section 6 of Supplement 3 missing from Table 3-2. These two components are macro functions that are described in response to RAI-40. These macro components were created using components found in Table 3-2.

RAI 41S01

QUESTION:

The response is acceptable, revise the LTR to reflect the RAI response.

RESPONSE:

The Licensing Topical Report will be updated 90 days following issuance of the Safety Evaluation Report and submitted to the NRC.