

July 27, 2010

MEMORANDUM TO: Mark Tonacci, Chief
BWR Projects Branch
Division of New Reactor Licensing
Office of New Reactors

FROM: Tekia Govan, Project Manager **/RA/**
BWR Projects Branch
Division of New Reactor Licensing
Office of New Reactors

SUBJECT: REGULATORY AUDIT SUMMARY OF SOUTH TEXAS PROJECT,
UNITS 3 AND 4 COMBINED LICENSE APPLICATION, HYDROLOGY –
GROUNDWATE MODELING

By letter dated September 24, 2008, South Texas Project Nuclear Operating Company (STPNOC) submitted South Texas Project (STP) Units 3 and 4 Combined License Application (COLA). To support the staff's evaluation of Tier 2 Chapter 2.4 - Hydrology, the U. S. Nuclear Regulatory Commission (NRC) staff participated in an on-site audit of the STP and Bechtel documentation for groundwater modeling. The audit occurred at the Bechtel Offices in Frederick, Maryland on May 25, 2010. The detailed results of the audit are provided in the attached Enclosure.

Docket Nos.: 52-012
52-013

Enclosure:
As stated

CONTACT: Tekia Govan, NRO/DNRL
301-415-6197

July 27, 2010

MEMORANDUM TO: Mark Tonacci, Chief
BWR Projects Branch
Division of New Reactor Licensing
Office of New Reactors

FROM: Tekia Govan, Project Manager /RA/
BWR Projects Branch
Division of New Reactor Licensing
Office of New Reactors

SUBJECT: REGULATORY AUDIT SUMMARY OF SOUTH TEXAS PROJECT,
UNITS 3 AND 4 COMBINED LICENSE APPLICATION, HYDROLOGY –
GROUNDWATER MODELING

By letter dated September 24, 2008, South Texas Project Nuclear Operating Company (STPNOC) submitted South Texas Project (STP) Units 3 and 4 Combined License Application (COLA). To support the staff's evaluation of Tier 2 Chapter 2.4 - Hydrology, the U. S. Nuclear Regulatory Commission (NRC) staff participated in an on-site audit of the STP and Bechtel documentation for groundwater modeling. The audit occurred at the Bechtel Offices in Frederick, Maryland on May 25, 2010. The detailed results of the audit are provided in the attached Enclosure.

Docket Nos.: 52-012
52-013

Enclosure:

As stated

CONTACT: Tekia Govan, NRO/DNRL
301-415-6197

DISTRIBUTION:

PUBLIC

LPLI-1 R/F

HAhn, NRO

TGovan, NRO

MTonacci, NRO

RRaione, NRO

GWunder, NRO

ADAMS Accession No.: ML102070081

NRO-002

OFFICE	DNRL/BWR/PM	DNRL/BWR/LA	DSER/RHEB/TR	DSER/RHEB/BC	DNRL/BWR/PM
NAME	TGovan	BAbeywickrama	HAhn	RRaione	GWunder
DATE	7/27/10	7/27/10	7/27/10	7/27/10	7/27/10

OFFICIAL RECORD COPY

**SOUTH TEXAS PROJECT (STP) UNITS 3 AND 4 COMBINED LICENSE APPLICATION,
2.4 Hydrology - Groundwater
AUDIT SUMMARY**

1. Background

South Texas Project (STP) submitted to the U. S. Nuclear Regulatory Commission (NRC) groundwater modeling documentation as a part of their Combined Operating License Application for Units 3 and 4. NRC staff reviewed the modeling documentation within FSAR Sections 2.4.12 and 2.4.13 and found deficiencies in the modeling, mainly in the set up of the boundary conditions and simulation scenarios. To address the deficiencies in the groundwater model, the staff issued supplemental requests for additional information (RAI) on April 16, 2010. The purpose of the audit is for the staff to review the STP's groundwater model, supporting modeling documentation, and calculation packages. The audit was needed for the staff to better understand the modeling result in order to make accurate safety conclusions in relation to estimate maximum groundwater level and to assess the radiological consequences of accidental releases to groundwater.

The site audit was held on May 25, 2010 at Bechtel's offices in Frederick, Maryland between the hours of 8:30 a.m. and 4:30 p.m. In attendance from the NRC were Tekia Govan, Hosung Ahn, Joseph Giacinto, and Nebiyu Tiruneh, and a consultant to the NRC, Charles Kincaid, Pacific Northwest National Laboratory (PNNL). In attendance for South Texas Project Nuclear Operating Company (STPNOC) was Dick Bense and for Bechtel Power were Garrett Day, Kenneth Bell, Bob Yamrus, Chris Krambis (Bechtel Seconded), Nick Martin, Harry Moate, Mike Brooks, and Altheia Wyche. Also in attendance was Neven Kresic from MACTEC. On the telephone through noon and especially for discussion of the planned response to RAI 02.04.12-48 were Dave Dujka, Rafael Gonzales, Reed Westmoreland, Keith Fraizer, and Mike Svetlik.

2. Regulatory Basis

This regulatory audit is based on the following:

- Standard Review Plan 2.4.12 and 2.4.13
- Regulatory Guide 1.206

3. Audit Activities

STPNOC and Bechtel Power began the site audit with an overview of the groundwater model of the STP site which was documented in the STPNOC submittal dated November 30, 2009 (Letter U7-C-STP-NRC-090206). This overview drew from the material presented in the groundwater model document and details of the presentation will not be reported here. However, the presentation provided an opportunity to clarify several points.

- At this time, Bechtel Power and STPNOC plan to stay with the Visual MODFLOW Version 4.3 code for this project; however, they noted that they had obtained a slight change in the code allowing for more efficient simulation of large problems (i.e., large numbers of nodes and computational cells).

- The boundary conditions are based on data from a variety of sources implying varying accuracy and times. For example, Bechtel Power staff observed the height of the MCR to be 42 ft above MSL on one day in September 2008 while taking groundwater piezometer levels. At points in the immediate vicinity of the proposed plant they used recent LiDAR measurements (circa 2007) to assign surface water levels. At points more distant from the proposed plant site, they used USGS topography maps from 1972 to assign surface water levels. The annual river stage was based on river stage data from the USGS gage station near Bay City for the years 2003 through 2007. If more thorough information on the boundary conditions is needed by the NRC, STPNOC will respond to an RAI.
- NRC noted a possible error in one of the four simulation case files provided for NRC review. The NRC noted that a case involving the MCR at 49 ft above MSL appears to have a few MCR model cells assigned as 42 ft MSL instead of 49 ft MSL. During the site audit, Bechtel Power staff reviewed the model input files and concurred that this particular case was in error. They will be correcting and resubmitting the result of this simulation, and checking other cases for similar potential errors.

4. Audit Results

At the close of the site audit the NRC project manager, Tekia Govan, invited STPNOC to participate in a Wednesday call to review progress on open items including RAI responses. Ms. Govan also noted that NRC hydrologists would confer with NRC health physicists on the responses to RAI 02.04.13-13 and 02.04.13-15. If additional clarification is needed, the health physicists would issue supplemental RAIs. Finally, Ms. Govan noted that sharing draft RAI responses during the Wednesday calls on open items, which are open to the public, might speed the resolution of open items in FSER Sections 2.4.12 and 2.4.13.

At the close of the site audit the STPNOC FSAR chapter manager, Dick Bense, indicated that the scheduled May 27, 2010 delivery of two responses to RAIs would be delayed for revisions discussed during the site audit. Furthermore, STPNOC and Bechtel Power would be reviewing their plan and schedule for responding to each of the RAIs, and would issue a revised schedule for their submittal to the NRC in the near future

COL - STP Nuclear - South Texas Mailing List

(Revised 06/23/2010)

cc:

Certrec Corporation
4200 South Hulen, Suite 422
Fort Worth, TX 76109

Mr. Brian Almon
Public Utility Commission
William B. Travis Building
PO Box 13326
1701 North Congress Avenue
Austin, TX 78701-3326

Ms. Michele Boyd
Legislative Director
Energy Program
Public Citizens Critical Mass Energy
and Environmental Program
215 Pennsylvania Avenue, SE
Washington, DC 20003

C. M. Canady
City of Austin
Electric Utility Department
721 Barton Springs Road
Austin, TX 78704

Mr. Ted Enos
4200 South Hulen
Suite 422
Ft. Worth, TX 76109

Ms. Susan M. Jablonski
Services
Office of Permitting, Remediation
and Registration
Texas Comm. on Env. Quality
MC-122
P.O. Box 13087
Austin, TX 78711-3087

Judge
Matagorda County
Matagorda County Courthouse
1700 Seventh Street
Bay City, TX 77414

C. Kierksey
City of Austin
Electric Utility Department
721 Barton Springs Road
Austin, TX 78704

M. A. McBurnett
VP, Oversight/Regulatory Affairs
STP Nuclear Operating Company
4000 Avenue F, Suite A
Bay City, TX 77414

Bill Mookhoek
Licensing Supervisor
STP Units 3 and 4
Project Electric Generating Station
P.O. Box 289
Wadsworth, TX 77483

Mr. Terry Parks
Chief Inspector
Texas Department of Licensing
and Regulation
Boiler Division
P.O. Box 12157
Austin, TX 78711

Kathy C. Perkins, RN, MBA
Assistant Commissioner
Division for Regulatory Services
Texas Department of State Health

P.O. Box 149347
Austin, Texas 78714-9347

Policy Director
Environmental and Natural Resources
P. O. Box 12428
Austin, TX 78711-3189

Mr. Frank M. Quinn
8 Oak Avenue
Gaithersburg, MD 20877-2705

COL - STP Nuclear - South Texas Mailing List

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

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

J. J. Sheppard
President & CEO
STP Nuclear Operating Company
P.O. Box 289
Wadsworth, TX 77483

Mr. Robert E. Sweeney
IBEX ESI
4641 Montgomery Avenue
Suite 350
Bethesda, MD 20814

Mr. Steve Winn
STP Nuclear Operating Company
1301 McKinney, Suite 2300
Houston, TX 77010

Mr. Jon C. Wood
Cox, Smith, & Matthews
112 East Pecan, Suite 1800
San Antonio, TX 78205

COL - STP Nuclear - South Texas Mailing List

Email

APH@NEI.org (Adrian Heymer)
awc@nei.org (Anne W. Cottingham)
BrinkmCB@westinghouse.com (Charles Brinkman)
chris.maslak@ge.com (Chris Maslak)
cindyrae_52@yahoo.com
cwaltman@roe.com (C. Waltman)
david.lewis@pillsburylaw.com (David Lewis)
Derlinda.Bailey@chguernsey.com (Derinda Bailey)
donald.woodlan@luminant.com (Donald Woodlan)
dwstillwell@stpegs.com (Bill Stillwell)
ed.burns@earthlink.net (Ed Burns)
eliza.seedcoalition@gmail.com (Elza Brown)
erg-xl@cox.net (Eddie R. Grant)
gzinke@entergy.com (George Alan Zinke)
jerald.head@ge.com (Jerald G. Head)
jgutierrez@morganlewis.com (Jay M. Gutierrez)
jim.riccio@wdc.greenpeace.org (James Riccio)
Joseph_Hegner@dom.com (Joseph Hegner)
junichi_uchiyama@mnes-us.com (Junichi Uchiyama)
karen@seedcoalition.org (Karen Hadden)
kdrichards@stpegs.com (Kevin Richards)
KSutton@morganlewis.com (Kathryn M. Sutton)
kwaugh@impact-net.org (Kenneth O. Waugh)
lchandler@morganlewis.com (Lawrence J. Chandler)
ldblaylock@cpsenergy.com (Larry Blaylock)
louis.eichenberger@ge.com (Louis Eichenberger)
mamcburnett@stpegs.com (Mark McBurnett)
Marc.Brooks@dhs.gov (Marc Brooks)
maria.webb@pillsburylaw.com (Maria Webb)
mark.beaumont@wsms.com (Mark Beaumont)
Mark.Crisp@chguernsey.com (Mark Crisp)
matias.travieso-diaz@pillsburylaw.com (Matias Travieso-Diaz)
maurerbf@westinghouse.com (Brad Maurer)
media@nei.org (Scott Peterson)
MSF@nei.org (Marvin Fertel)
nirsnet@nirs.org (Michael Mariotte)
Nuclaw@mindspring.com (Robert Temple)
patriciaL.campbell@ge.com (Patricia L. Campbell)
Paul@beyondnuclear.org (Paul Gunter)
pshastings@duke-energy.com (Peter Hastings)
RJB@NEI.org (Russell Bell)
sabinski@suddenlink.net (Steve A. Bennett)
sandra.sloan@areva.com (Sandra Sloan)
sfrantz@morganlewis.com (Stephen P. Frantz)

COL - STP Nuclear - South Texas Mailing List

smhead@stpegs.com (Scott Head)
stephan.moen@ge.com (Stephan Moen)
Tansel.Selekler@nuclear.energy.gov (Tansel Selekler)
tom.miller@hq.doe.gov (Tom Miller)
Vanessa.quinn@dhs.gov (Vanessa Quinn)
Wanda.K.Marshall@dom.com (Wanda K. Marshall)
wayne.marquino@ge.com (Wayne Marquino)
wemookhoek@stpegs.com (Bill Mookhoek)
william.maher@fpl.com (William Maher)