Florida Power
CORPORATION

July 17, 1980

File: 3.B.5-a

Mr. Robert W. Reid
Chief
Operating Reactors Branch #4
Division of Operating Reactors
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Crystal River Unit 3
Docket No. 50-302
Operating License No. DPR-72
NRC letter dated May 2, 1980, Requesting Information
Concerning Pressurizer Safety Valves.

Dear Mr. Reid:

In response to the subject letter requesting information concerning Pressurizer Relief Valves, Florida Power Corporation hereby submits the enclosed report on thermal analysis of the relief piping prepared by Gilbert Associates, Inc.

As indicated in our June 25, 1980 letter, we will transmit to you EPRI inspection report on CR-3 Pressurizer Safety Valves, RCV-8 and 9, when it becomes available.

Should you have any questions on this report, please contact this office.

Very truly yours,

FLORIDA POWER CORPORATION

Patsy Y. Baynard

P. Y. Baynard
Manager
Nuclear Support Services

Attachment

Baynard (W09)D3-1

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8007220383

STATE OF FLORIDA

COUNTY OF PINELLAS

P. Y. Baynard states that she is the Manager, Nuclear Support Services of Florida Power Corporation; that she is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission the information attached hereto; and that all such statements made and matters set forth therein are true and correct to the best of her knowledge, information and belief.

P. Y. Baynard

Subscribed and sworn to before me, a Notary Public in and for the State and County above named, this 17th day of June, 1980.

Notary Public

Notary Public, State of Florida at Large,
My Commission Expires: June 8, 1984

HansfordNotary (D12)

Gilbert/Commonwealth engineers and consultants

GILBERT ASSOCIATES, INC., P. O. Box 1498, Reading, PA 19603 Tel. 215 775-2600/Cable Gilbert Telex 835-431

TELECOPIED 7-7-80

July 7, 19

Mr. E. C. Simpson
Manager, Nuclear Engineering
Florida Power Corporation
P. O. Box 14042/H-8
St. Petersburg, Florida 33733

Re: RCV-10(F) Piping to Reactor
Coolant Drain Tank
Crystal River Unit #3

Ref: FCS 1217

Dear Mr. Simpson:

The referenced letter stated that Gilbert considered the submittal of the "Pressurizer Transient Relief Valve Discharge Report" to be final based on the facts presented. One item that was not discussed in depth is the fact that the subject valve was analyzed as a low capacity type, i.e., 106,172 #/hr., whereas in reality the valve is a high capacity type with a discharge rate of 152,888 #/hr.

When Gilbert performed the analysis for the report, the discharge capacity was assumed to be 117,000 #/hr. (to account for accumulation). Figure 2 of the report clearly shows that the load generated is approximately .4 Kips whereas the original design load was 2 Kips. If the higher capacity valve RCV-10(F) was used in the analysis, the load would not double, but more than likely increase in proportion to discharge rates. The conservative doubling of the load would provide a .8 Kip value which is still well below the original 2 Kip design.

Again, Gilbert reiterates that the integrity of the piping system from the Pressurizer to the Reactor Coolant Drain Tank has not been jeopardized as a result of the February 26 incident and that the CR-3 Unit is safe to operate in situ.

Should there be any questions, please advise.

Very truly yours,

F. J. Tomazic
Project Manager

FJT:ejf

cc: E. C. Simpson P. L. Bunker F. J. Tomazic (2)
R. A. Snow R. Kopicki

Gilbert/Commonwealth engineers and consultants

GILBERT ASSOCIATES, INC., P. O. Box 1498, Reading, PA 19603/Tel. 215 775-2600/Cable Gilasoc/Telex 836-431

July 3, 1980

FCS - 1217

Mr. E. C. Simpson
Manager, Nuclear Engineering
Florida Power Corporation
P.O. Box 14042/H-8
St. Petersburg, Florida 33733

Re: Final Analysis of February 26, 1980
Pressurizer Transient Relief Valve
Discharge Report
04-4862-008, Frag 42600
Crystal River Unit #3
Ref: FCS 1204 and 1209

Dear Mr. Simpson:

The first referenced letter stated that the subject report was "Preliminary" since verification was not complete and the higher nozzle loadings have not been approved by B&W. The second referenced letter provided the verification required. In a telecon with B&W yesterday with our Mr. R. A. Snow, the nozzle loadings have been approved and a letter stating acceptance will be issued today by B&W.

Gilbert has also performed an analysis of the supports attached to the piping from the Pressurizer (RCV-8F) to the Reactor Coolant Drain Tank in accordance with IE 79-02 and determined that the supports meet the criteria under design loading conditions. One support, RCH 55, did not meet the safety factor of 4 criterion under the abnormal loading conditions that occurred on February 26, 1980. This safety factor with this loading is between 2 and 4. Support RCH 35 was determined to exceed the maximum length as recommended in Power Piping Companies (PPC) catalog.

PPC was contacted today and they have advised thatif the design loadings include the abnormal loading conditions (steam and water hammer as well as two phase flow) than these two supports should be replaced. PPC also stated that the supports are still adequate in spite of the abnormal loadings provided that these snubbers be stroked in and out to verify that the piston rod is not bent or there is no damage to the wiper or bearing. The adjusting rod should also be checked for samage. Your Mr. R. C. Widell was notified of these concerns this morning.

Commonwealth engineers and consultants

ASSOCIATES, INC. P. O. Box 1476, Reading, PA 19603 (u) 215 775-2600 Cable: Assoc Telex 836 431

Mr. E. C. Simpson
Manager, Nuclear Engineering
Florida Power Corporation
Box 14042/H-8
St. Petersburg, Florida 33733

Mr. R. C. Widell has advised Gilbert via telecon that no damage has occurred to RCH 35 and 55 based on the above concerns. Therefore, Gilbert considers the report issued via FCS 1209 final. The CR 3 unit is not in jeopardy for safe operation as a result of the February 26, 1980 incident and no additional action is required at this time. In order to make the report complete, B&W's letter accepting the nozzle loadings should be attached to the report.

Should there be any questions, please advise.

Very truly yours,

F. J. Tomazic
Project Manager

FJT:C

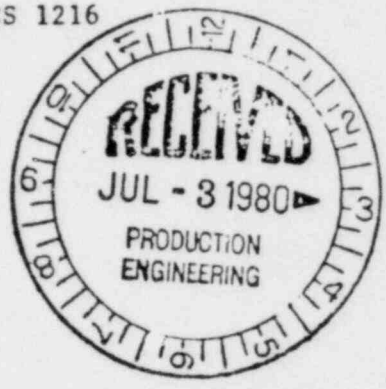
cc: E. C. Simpson
R. A. Snow
R. Kopicki
P. Bunker
F. J. Tomazic (2)

Gilbert/Commonwealth engineers and consultants

GILBERT ASSOCIATES, INC., P. O. Box 1498, Reading, PA 19603/Tel. 215 775-2600/Cable Gilasoc/Telex 836-431

July 2, 1980

FCS 1216



RCW

Mr. E. C. Simpson
Manager, Nuclear Engineering
Florida Power Corporation
P.O. Box 14042/H-8
St. Petersburg, Florida 33733

Re: PORV RCV-10(F)
High Capacity Discharge
Problem
04-4762-065
Crystal River Unit #3

Dear Mr. Simpson:

Gilbert has performed a conservative hand calculation and determined that the nozzle loads on the PORV with the high capacity discharge orifice are below allowables. This analysis does not affect the status of the piping from the pressurizer to reactor coolant drain tank (Frag 426). Comments on that status will be issued under separate cover.

In order to keep the records up to date please provide from Dresser sepias of the installed PORV and send one first-run copy to Gilbert.

Should there be any questions, please advise.

Very truly yours,

Ron Snow

FJT:RS:ac

R. Snow
Piping Engineer

cc: E. C. Simpson
F. J. Tomazic (2)
R. Snow
Dept. 0430 File

F. J. Tomazic

F. J. Tomazic
Project Manager

Babcock&Wilcox

Power Generation Group

P.O. Box 1260, Lynchburg, Va. 24505

Telephone (804) 384-5111

July 2, 1980
FPC-80-019

Mr. E.C. Simpson
Engineering Manager
Florida Power Corporation
Post Office Box 14042
St. Petersburg, FL 33733

Subject: Crystal River 3 Nuclear Station
Structural Evaluation of the Code Safety Valve Nozzles

Reference: Letter, R.L. Pittman to D.H. Lack, CR-80-151, dated April 11, 1980
Task 151

Dear Mr. Simpson:

As part of the reference Task 151, Babcock & Wilcox has completed an ASME stress analysis on the Pressurizer Code Safety Valve Nozzle using the reaction loads at the nozzles provided by GAI. The calculated stresses were less than the code allowable stress limits for normal operation.

The technical analysis and evaluation has been completed and QA'd to support startup of the CR-3 plant. The stress report must still be revised including a certification document with the calculational package.

Should you have any questions or comments, please contact me.

Very truly yours,

M R Stephens

M.R. Stephens
Engineering Product Manager

MRS/kjb

cc: D.C. Poole
P.Y. Baynard
W.P. Ellsberry
B.H. Zias

File SP-80-055

Gilbert/Commonwealth engineers and consultants

GILBERT ASSOCIATES, INC., P. O. Box 1498, Reading, PA 19603/Tel. 215 775-2600/Cable Gilasoc/Telex 836-431

June 27, 1980

FCS-1209

Mr. E. C. Simpson
Manager, Nuclear Engineering
Florida Power Corporation
P. O. Box 14042/H-8
St. Petersburg, Florida 33733

Re: Crystal River Unit #3
"Analysis of February 26, 1980
Pressurizer Transient Relief
Valve Discharge" Report
04-4762-008, Fragment 42600

Dear Mr. Simpson:

Attached are the verification forms for the calculation of the internal piping forces due to the incident water discharge transient and the calculation of the piping stresses and piping loads on the pressurizer, reactor coolant drain tank and the pipe supports. Pending Babcock and Wilcox's approval of the forces and moments on the pressurizer, this report is considered final. The authorization will be completed with the submittal of the calculations next week.

If you have any questions about this subject, please call me.

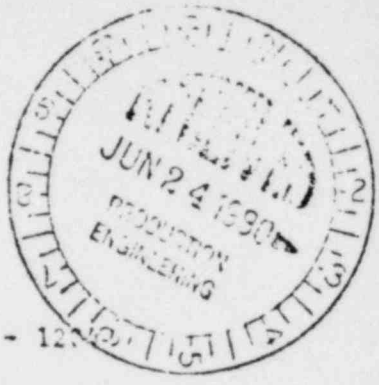
Yours truly,

Ron Snow
Piping Engineer

F. J. Tomazic
Project Manager

RS:FJT:lap
Attachment

cc: E. C. Simpson
P. L. Bunker
F. J. Tomazic (2)
R. J. Kopicki
Dept. 0430 File



June 23, 1980

3S - 12

Mr. E. C. Simpson
Manager, Nuclear Engineering
Florida Power Corporation
P.O. Box 14042/E-8
St. Petersburg, Florida 33733

Re: Revised Copy of "Preliminary Analysis of February 26, 1980 Pressurizer Transient Relief Valve Discharge" Report 04-4762-008, Revision 42600 Crystal River Unit 3

Dear Mr. Simpson:

Attached are three copies of the revised "Preliminary Analysis of February 26, 1980 Pressurizer Transient Relief Valve Discharge". This report includes the revised internal piping loads and is still considered preliminary since the computer analyses are unverified at this time. The analyses will be verified by June 27, 1980.

The revised incident pressurizer loadings which are higher than the original design pressurizer loadings have been sent to Babcock & Wilcox for their review.

If you have any questions concerning this report, please call me.

Very truly yours,

R. Snow
Piping Engineer

FJT:RS:ac
Attachments

F. J. Tomsic
Project Manager

cc: E. C. Simpson
F. J. Tomsic (2)
R. J. Topicki
G. A. Kreut
F. L. Bunker
Dept. File 0430