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September 30, 2005

U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

**ATTENTION:** Document Control Desk

**SUBJECT:** R.E. Ginna Nuclear Power Plant  
Docket No. 50-244

**Large Transient Tests Associated with License Amendment Request  
Regarding Extended Power Uprate**

**REFERENCES:**

- (a) Letter from Mary G. Korsnick, Ginna LLC, to NRC Document Control Desk, Subject: License Amendment Request Regarding Extended Power Uprate, dated July 7, 2005

In our 2005 Extended Power Uprate License Amendment Request (Reference (a)), R.E. Ginna Nuclear Power Plant, LLC (Ginna LLC) stated that a final proposal for large transient testing was still being developed and would be provided by September 30, 2005. This submittal provides the results of our evaluation of the benefits and risks associated with performing large transient tests as part of the EPU power escalation.

The proposed tests are described in Table 1 of the Attachment. These tests are comparable to the spectrum of tests normally associated with EPU escalation, with one addition - a manual turbine trip from approximately 30 per cent power level. As noted in the Attachment, we consider that this test is not required to demonstrate proper operation of control systems and verification of new setpoints (i.e., a large transient test is not required to demonstrate acceptability of the EPU). However, during the Operations review of our startup test plans, it was determined that this more integrated verification of control systems and setpoints would provide measurable benefits: exercise of control systems, verification of analytical models, response data for simulator tuning, and operator experience.

This test will now be factored into our startup test schedule from the 2006 refueling outage. If you have any questions, please contact George Wrobel at (585) 771-3535 or george.wrobel@constellation.com.

Very truly yours,

Handwritten signature of Mary G. Korsnick in black ink.

Mary G. Korsnick

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STATE OF NEW YORK :  
: TO WIT:  
COUNTY OF WAYNE :

I, Mary G. Korsnick, being duly sworn, state that I am Vice President – R.E. Ginna Nuclear Power Plant, LLC (Ginna LLC), and that I am duly authorized to execute and file this response on behalf of Ginna LLC. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other Ginna LLC employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.

Mary G. Korsnick

Subscribed and sworn before me, a Notary Public in and for the State of New York and County of MONROE, this 30 day of September, 2005.

WITNESS my Hand and Notarial Seal:

Sharon L. Miller  
Notary Public

My Commission Expires:

SHARON L. MILLER  
Notary Public, State of New York  
Registration No. 01M:6017755  
Monroe County  
Commission Expires December 21, 2006

Attachments:

Cc: S. J. Collins, NRC  
P. D. Milano, NRC  
Resident Inspector, NRC

Mr. Peter R. Smith  
New York State Energy, Research, and Development Authority  
17 Columbia Circle  
Albany, NY 12203-6399

Mr. Paul Eddy  
NYS Department of Public Service  
3 Empire State Plaza, 10th Floor  
Albany, NY 12223-1350

## Manual Turbine Trip Test for the Ginna EPU

### Summary

Ginna LLC has evaluated the potential benefits and risks associated with additional large plant transient tests for the Ginna EPU and has concluded that a spectrum of tests should be performed. One of these tests, a manual turbine trip test at approximately 30% EPU power that will be performed as part of the power escalation test plan, is of greater scope than the tests normally conducted for an EPU. We have reviewed industry operating experience for pressurized water reactors that have undergone uprates and have not identified an event where the large plant transient response was unexpected or control system settings were set incorrectly, even absent this test. In addition, the proposed EPU is consistent with that already allowed for a plant similar in design to Ginna Station. This provides confidence in our analytical ability to correctly predict plant transient response and calculate appropriate control system settings and leads us to conclude that additional large plant transient tests are not required.

However, Ginna LLC understands that our 17% EPU will be the largest one-time power uprate to date for a pressurized water reactor even though the final power level is consistent with that currently allowed for a plant similar in design to Ginna Station. After Operations review of the power escalation test plan, we have concluded that performing this type of manual turbine trip test is appropriate. A complete listing of the large plant transient tests in the power escalation test plan is provided as Table 1 to this attachment.

### Purpose of Test

The purpose of the manual turbine trip test will be to verify the dynamic large plant transient response and control system settings. The test will exercise control systems such as rod control, steam dump control, pressurizer level and pressure control, and steam generator water level control. The manner in which the control systems respond to the power and temperature mismatch as a result of the turbine trip will be verified, including the ability of the control systems to achieve stable plant conditions in an acceptable range. In this manner the manual turbine trip test will fulfill the purpose of the pressurizer level control test (Startup Test #SU 4.2.3), pressurizer pressure control test (SU 4.1.3), and steam dump test (SU 4.9.2) performed during original plant startup testing for Ginna. The test will also provide large plant transient response data that will be used when necessary and appropriate to tune both the simulator and engineering design models. Finally, the test will provide an opportunity to gain operator experience with a load rejection transient under controlled conditions that may then be used to adjust operating procedures when necessary and appropriate.

### Test Power Level

The manual turbine trip test will be performed at approximately 30% EPU power. This power provides a stable condition from which to initiate the test shortly after the main turbine is paralleled to the grid. A turbine trip from this power level will cause a power mismatch resulting in a change to average coolant temperature, which will cause control systems to be exercised. An evaluation of the plant and control system response will be conducted and the results extrapolated to verify that plant response to transients from

## Attachment 1

higher initial power levels will be acceptable. A manual turbine trip from approximately 30% EPU power will not present an unnecessary risk to creating an undesirable plant transient. Key plant parameters are predicted to maintain adequate margin to automatic protection features. Margins to protective features would be less for a test from higher power levels. Given the above, Ginna LLC has determined that a manual turbine trip test from approximately 30% EPU power appropriately balances the objectives of a load rejection test and overall plant risk.

### **Test Acceptance Criteria**

The acceptance criteria for the test will include verification that no reactor trip occurs and that pressurizer safety valves, main steam safety valves and pressurizer power operated relief valves do not open. The acceptance criteria will also include a requirement that the plant dynamic response is stable and converging on a range that supports safe operation at low power. Finally, if a plant transient occurs prior to performance of this test (e.g., manual turbine trip due to other reasons), which successfully demonstrates these objectives, then the proposed 30% EPU test will not be conducted.

### **Risk Mitigation**

Detailed planning and procedure preparation will precede the test to assure the increase in overall plant risk is mitigated. In particular, procedural criteria will be established to initiate operator manual control if malfunction of equipment is apparent. Calibration checks and post-modification testing of control systems will be conducted prior to the test. Contingency plans will be developed and incorporated into the test procedure to respond to equipment malfunctions. Finally, if the transmission operator requests that this test not be performed (e.g., system demands), or risk management analysis consistent with 10 CFR 50.65 (a)(4) show that the risk of the test to be significant (e.g., severe weather), then the test will not be performed. In this way Ginna LLC intends to minimize the impact on overall plant risk caused by the test.

Attachment 1

<b>Table 1</b> <b>Large Plant Transient Tests in Ginna EPU Power Ascension Test Plan</b>		
Proposed Test	Description	Expectation
Turbine Overspeed Trip from 20% EPU Power	The turbine will be taken to approximately 30% power, ramped back to no-load, with the reactor at approximately 20% power, and automatically tripped as speed exceeds the mechanical overspeed trip setpoint unloaded.	This test will verify proper operation of the overspeed mechanism for the new HP turbine, proper operation of the new turbine control valves and exercise the steam dump system.
10% Load Change at new 30% and 100% EPU Power	Fast power ramps limited by station license conditions and fuel pre-conditioning considerations.	These ramps will test NSSS and BOP control system operation, to ensure that no unanticipated aggregate effects have been produced by interaction of the plant modifications.
Manual Turbine Trip from 30% EPU Power	The turbine will be manually tripped causing a power mismatch and response of rod control, steam dump control, pressurizer level and pressure control and steam generator level control systems.	Validate the control system setpoints, provide operator experience with a load rejection transient, and provide data to tune simulator and Westinghouse design analyses which predict transient response for turbine trips from higher power levels.
Turbine Stop Valve, Governor Valve, and Intercept Valve Testing at 50% EPU Power	Standard turbine valve testing augmented by post-modification tests associated with HP Turbine and Governor Valve Replacement.	Validate dynamic performance of new governor valve design to ensure adequate transient response. Verify acceptable dynamic performance of the new HP turbine rotor during changes in individual arc steam flows.
Steam Generator Level / Feedwater Flow Dynamic testing at 30% and 100% EPU Power	Manually inserted level setpoint step-changes in the steam generator. Both up-going and down-going setpoint changes of different magnitudes will be inserted.	Verify SG level control system response and acceptability of overshoot, damping and steady-state limit cycling at the new licensed power level. Verify acceptable operation of the digital feedwater control system.