March 2, 2011

NRC 2011-0027
10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Point Beach Nuclear Plant, Units 1 and 2
Dockets 50-266 and 50-301
Renewed License Nos. DPR-24 and DPR-27

License Amendment Request 261
Extended Power Uprate
Response to Request for Additional Information

References: (1) FPL Energy Point Beach, LLC letter to NRC, dated April 7, 2009, License Amendment Request 261, Extended Power Uprate (ML091250564)

NextEra Energy Point Beach, LLC (NextEra) submitted License Amendment Request (LAR) 261 (Reference 1) to the NRC pursuant to 10 CFR 50.90. The proposed amendment would increase each unit's licensed thermal power level from 1540 megawatts thermal (MWt) to 1800 MWt, and revise the Technical Specifications to support operation at the increased thermal power level.

During a meeting on February 24 and 25, 2011, NextEra was requested to provide additional information regarding Point Beach Nuclear Plant (PBNP) post loss-of-coolant accident (LOCA) reactor vessel flow paths and flow velocities to enable continued review of the request. Enclosure 1 provides the NextEra response to the request for additional information.

This letter contains no new Regulatory Commitments and no revisions to existing Regulatory Commitments.

The information contained in this letter does not alter the no significant hazards consideration contained in Reference (1) and continues to satisfy the criteria of 10 CFR 51.22 for categorical exclusion from the requirements of an environmental assessment.

In accordance with 10 CFR 50.91, a copy of this letter is being provided to the designated Wisconsin Official.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on March 2, 2011.

Very truly yours,

NextEra Energy Point Beach, LLC

Larry Meyer
Site Vice President

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
PSCW

ENCLOSURE 1

NEXTERA ENERGY POINT BEACH, LLC
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

LICENSE AMENDMENT REQUEST 261
EXTENDED POWER UPRATE
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

NextEra Energy Point Beach, LLC (NextEra) submitted License Amendment Request (LAR) 261 (Reference 1) to the NRC pursuant to 10 CFR 50.90. The proposed amendment would increase each unit's licensed thermal power level from 1540 megawatts thermal (MWt) to 1800 MWt. During a meeting on February 24 and 25, 2011, NextEra was requested to provide additional information regarding Point Beach Nuclear Plant (PBNP) post loss-of-coolant accident (LOCA) reactor vessel flow paths and flow velocities to enable the continued review of the request. The NextEra response to this request for additional information is provided below.

NextEra Response

WCOBRA/TRAC (WC/T) transient data for the PBNP extended power uprate (EPU) large break LOCA (LBLOCA) is shown in Attachment A, Figures 1 through 5. The WC/T transient data is obtained from the emergency core cooling system (ECCS) recirculation phase (>20 minutes from accident initiation) of an LBLOCA with the low head safety injection (LHSI) pumps injecting water into the reactor vessel upper plenum and the high head safety injection (HHSI) pumps secured. The figures demonstrate the expected thermal convection behavior – downflow from the low power core region to the lower plenum (Figure 1), predominantly upflow from the lower plenum to the average and high power core regions (Figures 2 through 4), and relatively stagnant flow at the lower support plate (Figure 5).

Attachment A, Figure 6, transmits the flow diagram indicating what NextEra believes to be the predominant boric acid transport phenomenon, which is density driven convection between the core and lower plenum and within the lower plenum of the reactor vessel. The transport phenomenon identified on the flow diagram is consistent with a highly ranked phenomenon in the Reference (2) transport and mixing phenomena identification and ranking table. The transport phenomenon within the lower plenum considered to be the most important is density driven convection due to solute concentration gradient (core relative to lower plenum) analogous to Rayleigh-Bénard convection.

References

(1) FPL Energy Point Beach, LLC letter to NRC, dated April 7, 2009, License Amendment Request 261, Extended Power Uprate (ML091250564)

(2) WCAP-17047-NP, dated May 2009, Phenomena Identification and Ranking Tables (PIRT) for Un-Buffered/Buffered Boric Acid Mixing/Transport and Precipitation Modes in a Reactor Vessel During Post-LOCA Conditions (ML092010339)

ATTACHMENT A

NEXTERA ENERGY POINT BEACH, LLC
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

LICENSE AMENDMENT REQUEST 261
EXTENDED POWER UPRATE
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

FIGURES FOR PBNP EPU LBLOCA BORON PRECIPITATION ANALYSIS

6 pages follow

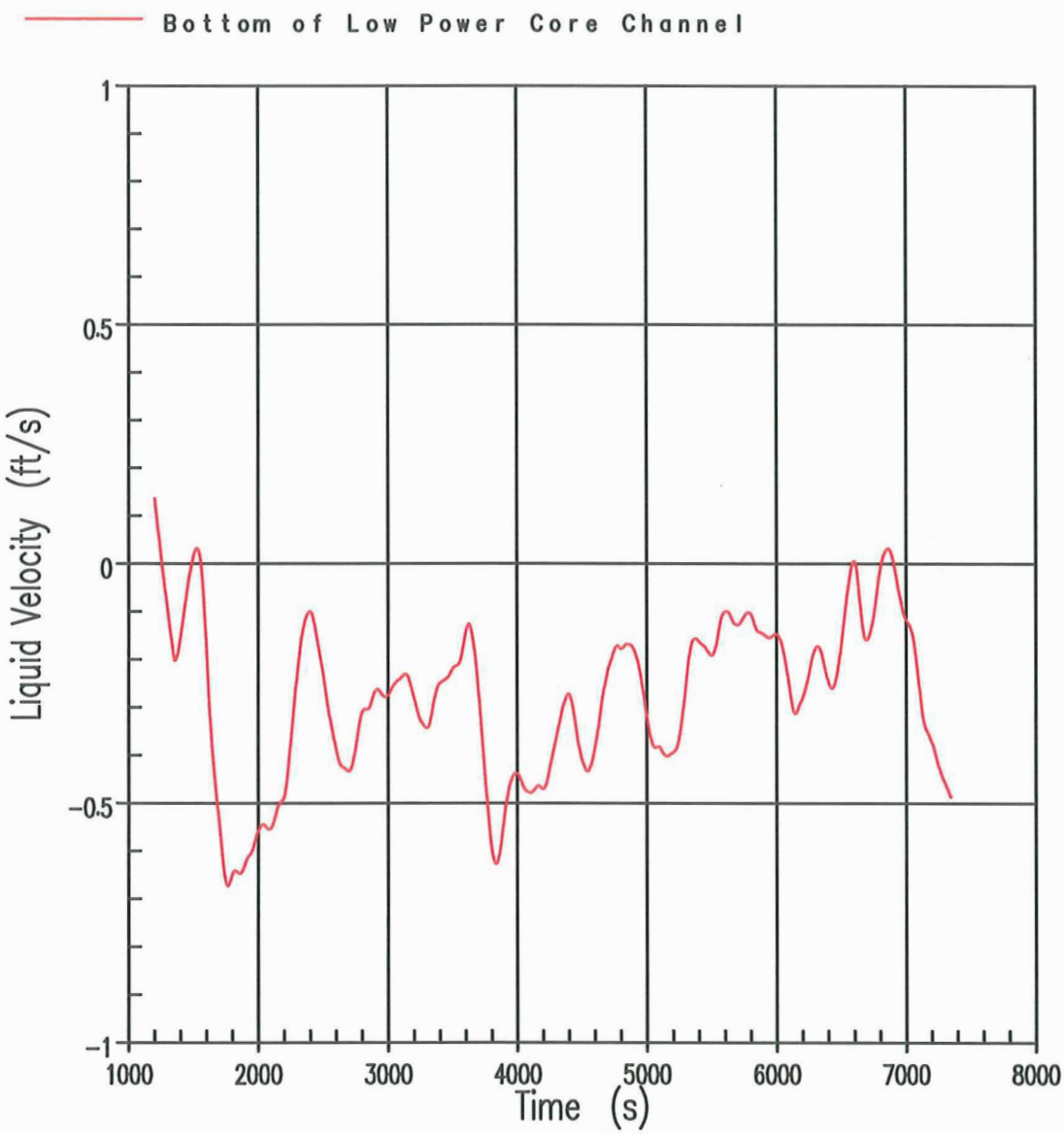

Figure 1: Liquid Velocity at Bottom of Low Power (LP) Core Channel

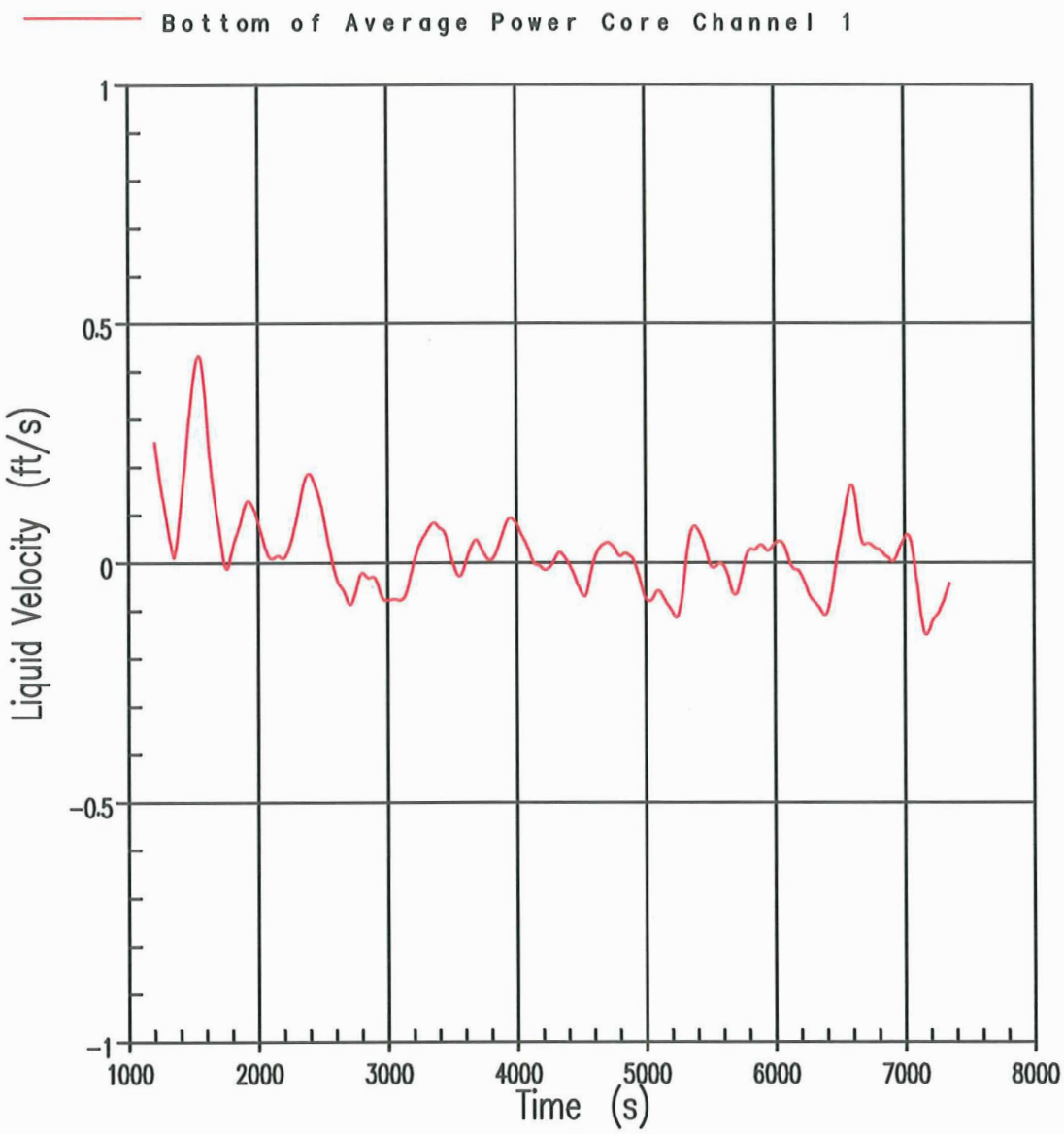

Figure 2: Liquid Velocity at Bottom of Average Power Core Channel 1

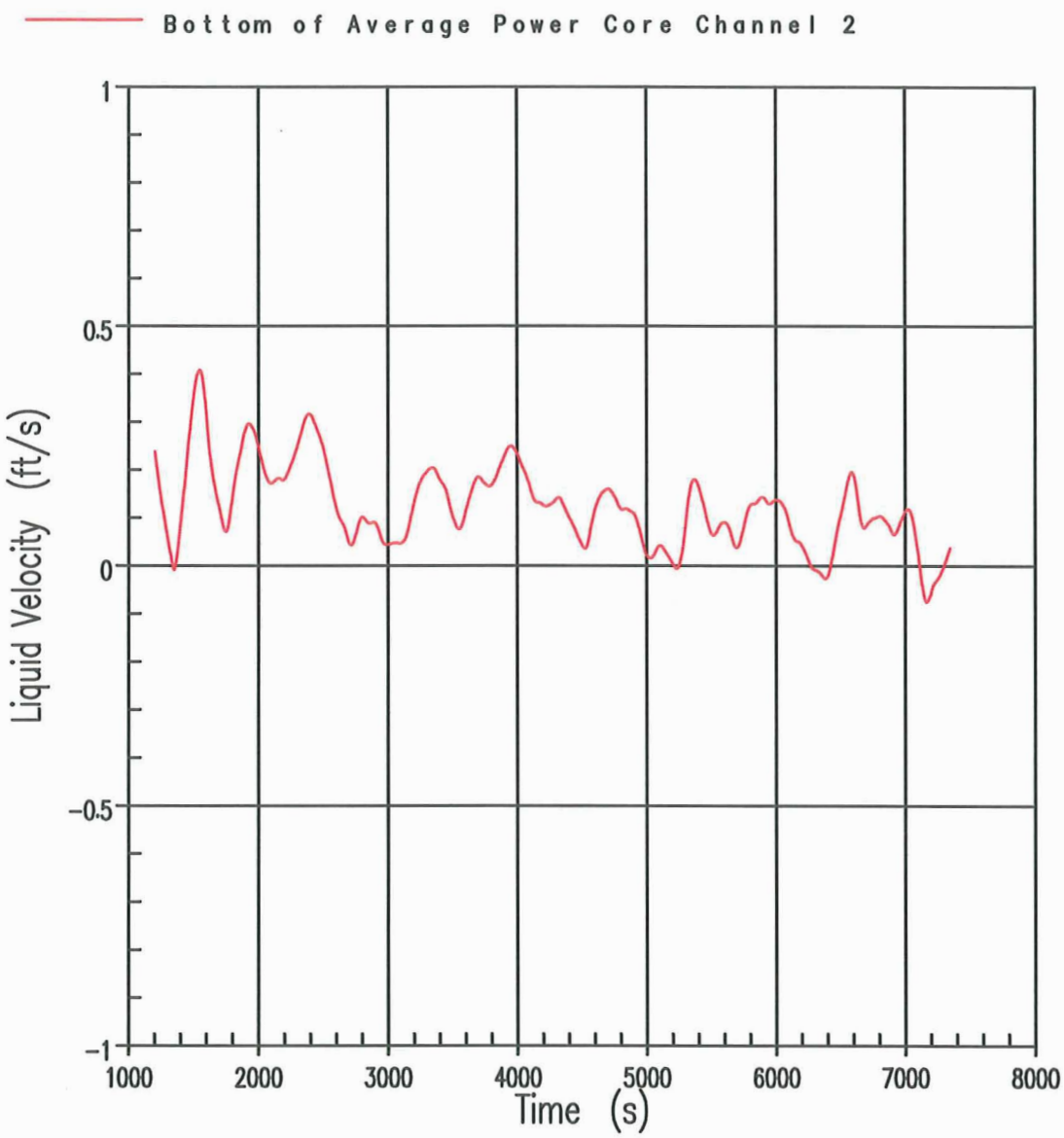

Figure 3: Liquid Velocity at Bottom of Average Power Core Channel 2

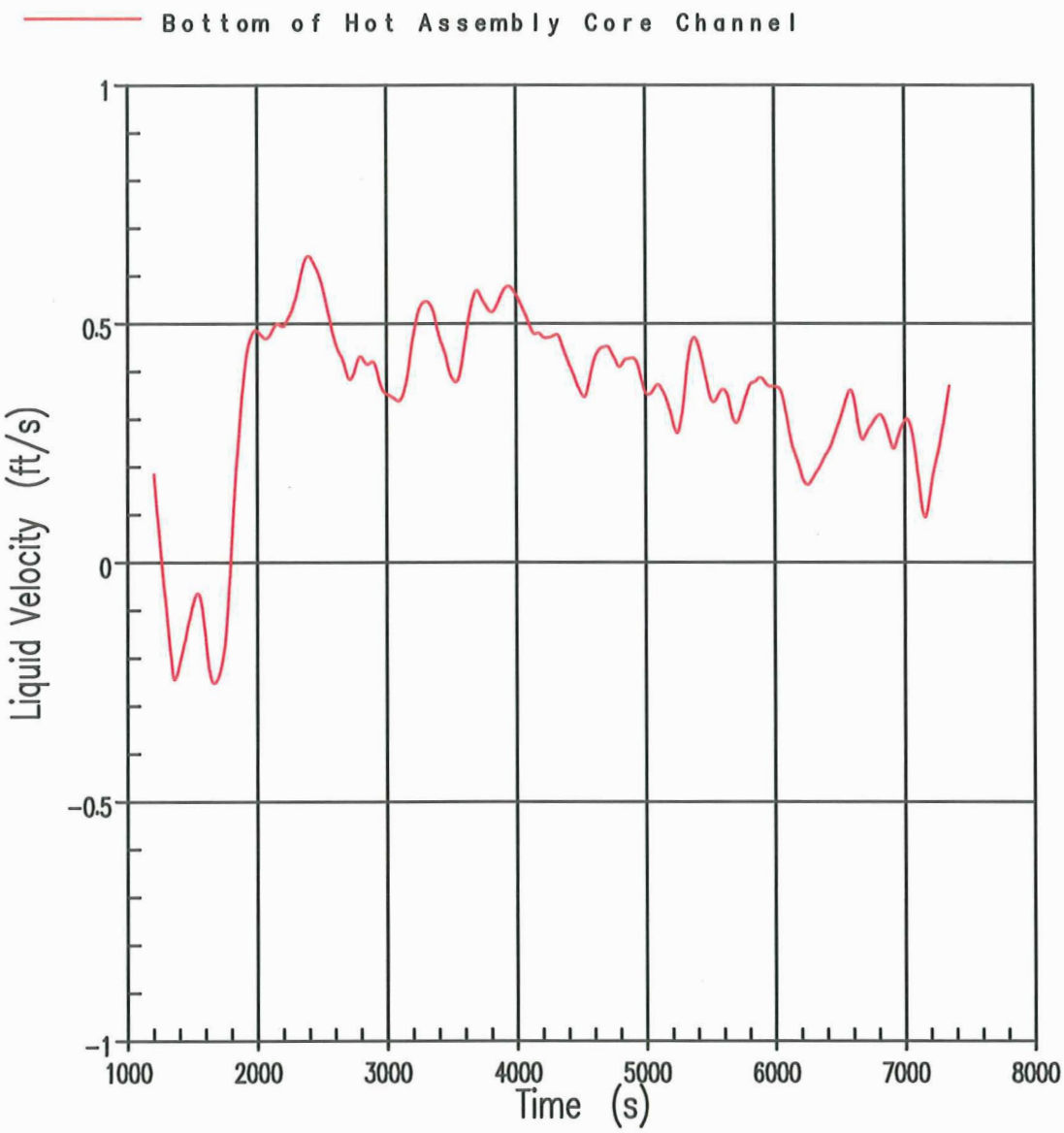

Figure 4: Liquid Velocity at Bottom of Hot Assembly (HA) Core Channel

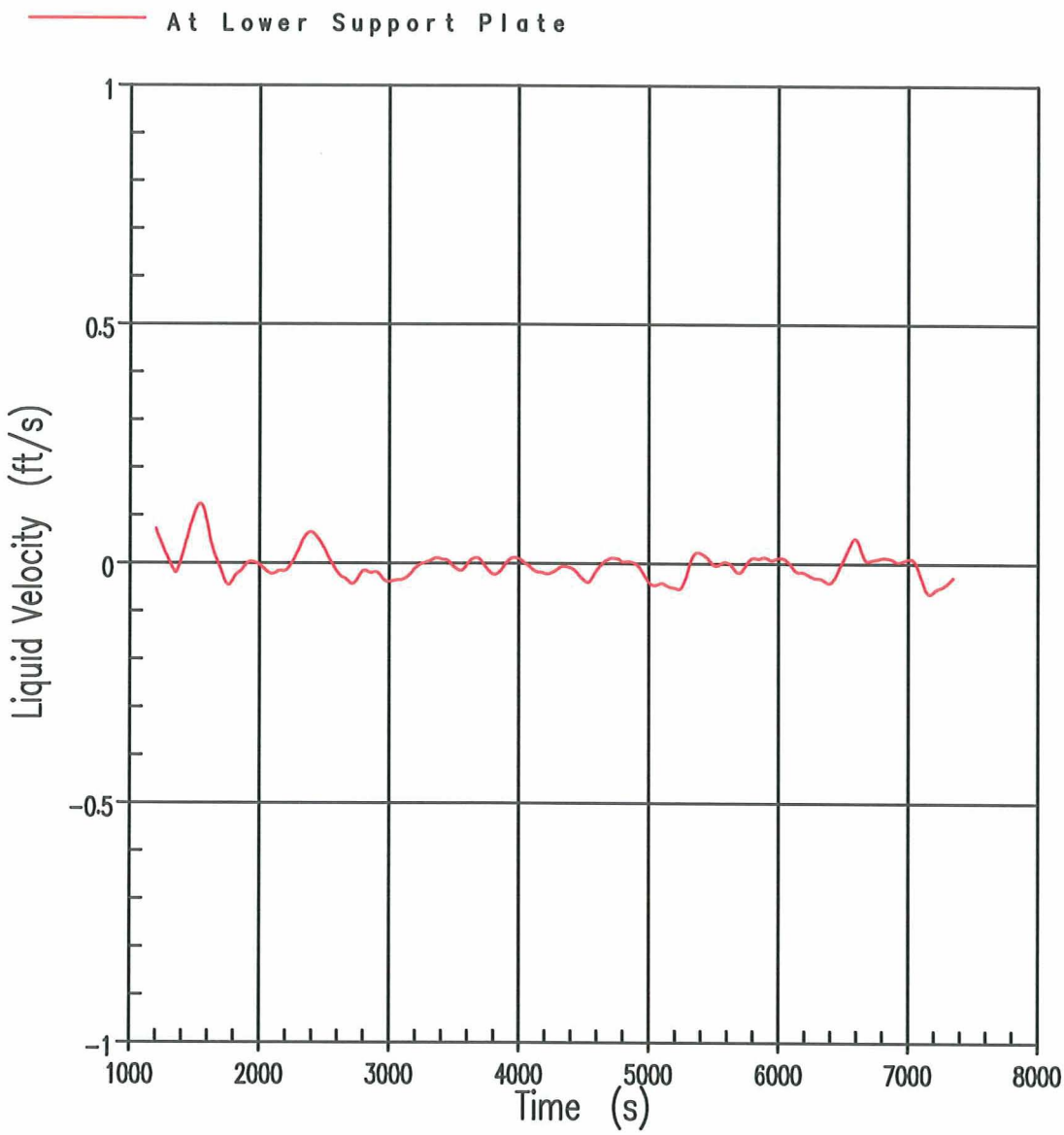

Figure 5: Liquid Velocity at Lower Support Plate

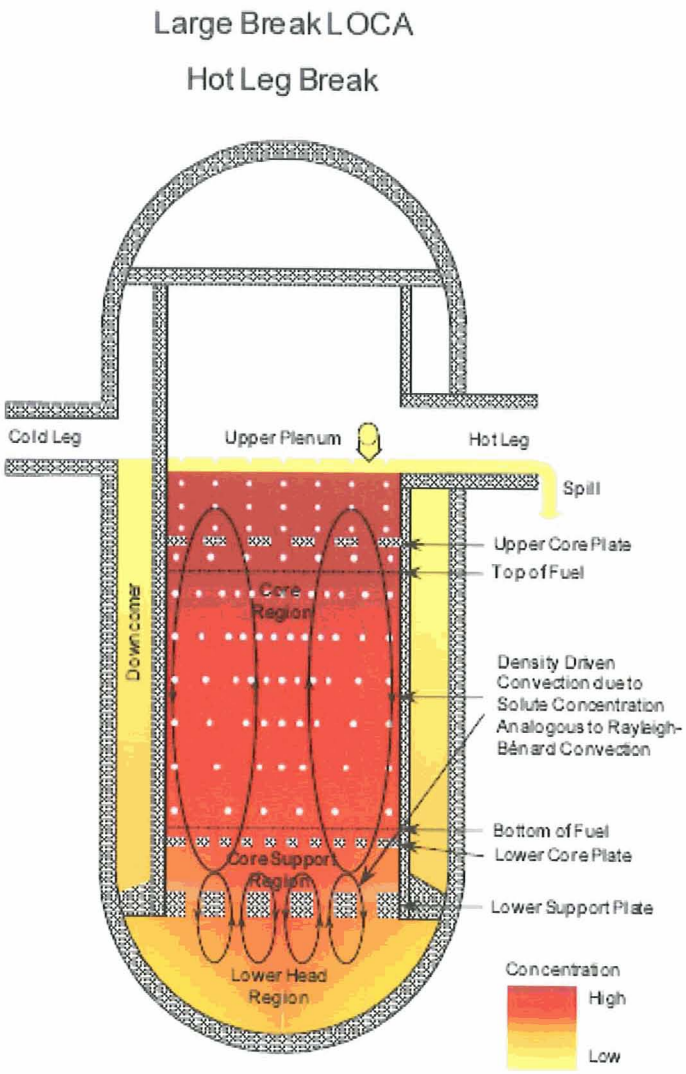

Figure 6: Liquid Temperature in Lower Plenum of Reactor Vessel