



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 13, 2014

Mr. Michael J. Pacilio
Senior Vice President
Exelon Generation Company, LLC
President and Chief Nuclear Officer (CNO)
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS TO
REVISE TECHNICAL SPECIFICATION 5.5.16, "CONTAINMENT LEAKAGE
RATE TESTING PROGRAM" (TAC NOS. MF2964 AND MF2965)

Dear Mr. Pacilio:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 175 to Facility Operating License No. NPF-72 and Amendment No. 175 to Facility Operating License No. NPF-77 for the Braidwood Station (Braidwood), Units 1 and 2, respectively. The amendments are in response to your application dated October 10, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13284A106).

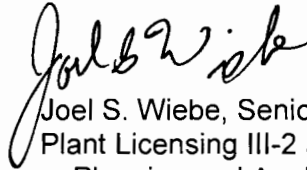
The amendments revise the date for the performance of the Braidwood, Unit 2, Type A, or integrated containment leakage rate test described in Technical Specification (TS) 5.5.16, "Containment Leakage Rate Testing Program." Specifically, the change revises the date for the performance of the Type A test from "no later than May 4, 2014," to "prior to entering MODE 4 at the start of Cycle 18." Additionally, a requirement is established for Braidwood, Unit 2, to exit the MODEs of applicability for containment as described in TS 3.6.1, "Containment" (i.e., MODEs 1 - 4), no later than May 4, 2014.

M. Pacilio

- 2 -

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in black ink, appearing to read "Joel S. Wiebe". The signature is written in a cursive style with a large initial "J".

Joel S. Wiebe, Senior Project Manager
Plant Licensing III-2 and
Planning and Analysis Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-456 and STN 50-457

Enclosures:

1. Amendment No. 175 to NPF-72
2. Amendment No. 175 to NPF-77
3. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

EXELON GENERATION COMPANY, LLC

DOCKET NO. STN 50-456

BRAIDWOOD STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 175
License No. NPF-72

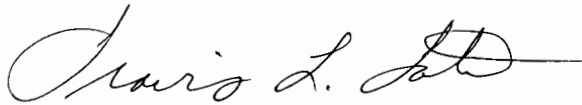
1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (the licensee) dated October 10, 2013, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-72 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 175 and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 14 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in cursive script, appearing to read "Travis L. Tate".

Travis L. Tate, Chief
Plant Licensing III-2 and
Planning and Analysis Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications and Facility Operating License

Date of Issuance: March 13, 2014



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

EXELON GENERATION COMPANY, LLC

DOCKET NO. STN 50-457

BRAIDWOOD STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 175
License No. NPF-77

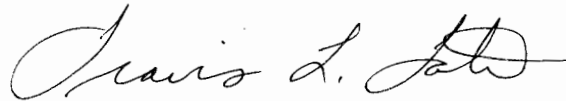
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Exelon Generation Company, LLC (the licensee) dated October 10, 2013, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-77 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 175 and the Environmental Protection Plan contained in Appendix B, both of which were attached to License No. NPF-72, dated July 2, 1987, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 14 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Travis L. Tate, Branch Chief
Plant Licensing III-2 and
Planning and Analysis Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications and Facility Operating License

Date of Issuance: March 13, 2014

ATTACHMENT TO LICENSE AMENDMENT NOS. 175 AND 175

FACILITY OPERATING LICENSE NOS. NPF-72 AND NPF-77

DOCKET NOS. STN 50-456 AND STN 50-457

Replace the following pages of the Facility Operating Licenses and the Appendix A Technical Specifications (TSs) with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

License NPF- 72
Page 3

License NPF- 77
Page 3

TSs
5.5-21

Insert

License NPF-72
Page 3

License NPF-77
Page 3

TS
5.5-21

- (3) Exelon Generation Company, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (4) Exelon Generation Company, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (5) Exelon Generation Company, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. The license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at reactor core power levels is not in excess of 3645 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein and other items identified in Attachment 1 to this license. The items identified in Attachment 1 to this license shall be completed as specified. Attachment 1 is hereby incorporated into the license.

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 175, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Emergency Planning

In the event that the NRC finds that the lack of progress in completion of the procedures in the Federal Emergency Management Agency's final rule, 44 CFR Part 350, is an indication that a major substantive problem exists in achieving or maintaining an adequate state of emergency preparedness, the provisions of 10 CFR Section 50.54(s)(2) will apply.

material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

- (4) Exelon Generation Company, LLC pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (5) Exelon Generation Company, LLC, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. The license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at reactor core power levels is not in excess of 3645 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein and other items identified in Attachment 1 to this license. The items identified in Attachment 1 to this license shall be completed as specified. Attachment 1 is hereby incorporated into this license.

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 175, and the Environmental Protection Plan contained in Appendix B, both of which are attached to License No. NPF-72, dated July 2, 1987, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Emergency Planning

In the event that the NRC finds that the lack of progress in completion of the procedures in the Federal Emergency Management Agency's final rule, 44 CFR Part 350, is an indication that a major substantive problem exists in achieving or maintaining an adequate state of emergency preparedness, the provisions of 10 CFR Section 50.54(s)(2) will apply.

5.5 Programs and Manuals

5.5.15 Safety Function Determination Program (SFDP) (continued)

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

5.5.16 Containment Leakage Rate Testing Program

A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, September 1995 and NEI 94-01, Revision 0, as modified by the following exceptions:

1. NEI 94-01 - 1995, Section 9.2.3: The first Unit 1 Type A test performed after the October 5, 1998 Type A test shall be performed no later than October 5, 2013.
2. NEI 94-01 - 1995, Section 9.2.3: In support of the Spring 2014 refueling outage, Unit 2 shall be placed in a MODE of operation where containment is not required to be OPERABLE in accordance with Technical Specification 3.6.1, "Containment," no later than May 4, 2014. The first Unit 2 Type A test performed after the May 4, 1999 Type A test shall be performed prior to entering MODE 4 at the start of Unit 2, Cycle 18.

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a , is 42.8 psig for Unit 1 and 38.4 psig for Unit 2

The maximum allowable containment leakage rate, L_a , at P_a , shall be 0.20% of containment air weight per day.

Leakage Rate acceptance criteria are:

- a. Containment leakage rate acceptance criterion is $\leq 1.0 L_a$. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $< 0.60 L_a$ for the Type B and C tests and $< 0.75 L_a$ for Type A tests; and



UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 175 TO FACILITY OPERATING LICENSE NO. NPF-72
AND AMENDMENT NO. 175 TO FACILITY OPERATING LICENSE NO. NPF-77
EXELON GENERATION COMPANY, LLC
BRAIDWOOD STATION, UNITS 1 AND 2
DOCKET NOS. STN 50-456 AND STN 50-457

1.0 INTRODUCTION

By letter to the U.S. Nuclear Regulatory Commission (NRC, the Commission) dated October 10, 2013, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13284A106), Exelon Generation Company, LLC (EGC, the licensee) requested changes to the technical specifications (TSs) for the Braidwood Station (Braidwood), Units 1 and 2. The proposed changes would revise the date for the performance of Braidwood, Unit 2, Type A, or integrated containment leakage rate test described in Technical Specification (TS) 5.5.16, "Containment Leakage Rate Testing Program." The proposed change would revise the date for the performance of the Type A test from "no later than May 4, 2014," to "prior to entering MODE 4 at the start of Cycle 18." Additionally, a requirement would be established in TS 5.5.16 for Braidwood, Unit 2, to exit the MODEs of applicability for containment as described in TS 3.6.1, "Containment" (i.e., MODEs 1 - 4), no later than May 4, 2014.

2.0 REGULATORY EVALUATION

Paragraph 50.54(o) of Title 10 of the *Code of Federal Regulations* (10 CFR), and 10 CFR Part 50, Appendix J, Option B, requires that a Type A test be conducted at a periodic interval based on historical performance of the overall containment system. The Type A test must be conducted (1) after a containment system has been completed and is ready for operation, and (2) at a periodic interval based on historical performance of the overall containment system. Section V.B.3 of 10 CFR 50, Appendix J, Option B, requires that the regulatory guide (RG) or other implementation document used by a licensee to develop a performance-based leakage-testing program must be included, by general reference, in the plant TSs. Furthermore, the submittal for TS revisions must contain justification, including supporting analyses, if the licensee chooses to deviate from methods approved by the Commission and endorsed in an RG.

Enclosure

The applicable regulatory requirements for containment on which the NRC staff based its review are:

General Design Criterion [GDC] 16, "Containment Design," states that reactor containment and associated systems shall be provided to establish an essentially leak-tight barrier against the uncontrolled release of radioactivity to the environment and to assure that the containment design conditions important to safety are not exceeded for as long as postulated accident conditions require.

Title 10 [of the *Code of Federal Regulations* (10 CFR)] Part 50, Appendix J, Option B, Section V.B, specifies that the regulatory guide [RG] (i.e., RG 1.163), or other implementing documents used to develop a performance-based leakage testing program must be included by general reference, in the plant's TS.

Deviations from guidelines endorsed in the RG referenced in a TS are to be submitted as a revision to the plant's TS.

RG 1.163, September 1995, Section C, "Regulatory Position," states that NEI [Nuclear Energy Institute] 94-01, Revision 0, dated July 26, 1995, "Industry Guideline for Implementing Performance Based Option of 10 CFR 50 Appendix J," (NEI 94-01) provides methods acceptable to the NRC staff for complying with the provisions of Option B in Appendix J to 10 CFR Part 50, subject to certain conditions specified therein.

NEI 94-01, Section 9.2, "Type A Test," provides guidance for conducting an Appendix A Type A test. Specifically, NEI 94-01, 9.2.2, states that if the Type A test interval ends while primary containment integrity is either not required or it is required solely for shutdown activities, the test interval may be extended indefinitely. However, a successful Type A test shall be completed prior to entering the operating mode requiring primary containment integrity.

10 CFR Part 50.36(5), "Administrative Controls," specifies, in part, that administrative controls are the provisions relating to procedures necessary to assure operation of the facility in a safe manner.

3.0 TECHNICAL EVALUATION

The licensee in its October 10, 2013, submittal, states that the Unit 2 refueling outage before Cycle 18 is scheduled to begin on May 3, 2014, and the Unit 2 Type A test will be performed on or about May 21, 2014. This would result in a brief extension from the current TS due date. Additionally, the licensee states that Unit 2 will not be in an operational MODE that will require containment to be operable as described in TS 3.6.1 during the entire period of the proposed extension. The requirements for containment during MODE 6 are addressed in TS 3.9.4, "Containment Penetrations," and are only applicable during the movement of recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 48 hours). The licensee states that Braidwood has an administrative restriction in Technical Requirements Manual Section 3.9.a, "Decay Time," that prevents the movement of recently irradiated fuel; therefore, any recently irradiated fuel in the Braidwood, Unit 2, reactor core will not be moved during the period of the proposed extension.

The licensee concludes in its October 10, 2013, submittal, that based on the short timeframe of the proposed extension, and the fact that the unit will not be in an operating MODE or condition requiring containment to be OPERABLE, administratively extending the Unit 2, Type A, test interval would not result in any significant changes to the analyses described in the licensee's license amendment request dated April 4, 2007 (ADAMS Accession No. ML070950418).

The TS 5.5.16, Exception 2, currently states:

NEI 94-01 - 1995, Section 9.2.3: The first Unit 2 Type A test performed after the May 4, 1999 Type A test shall be performed no later than May 4, 2014.

The proposed TS 5.5.16, Exception 2, states:

NEI 94-01 -1995, Section 9.2.3: In support of the Spring 2014 refueling outage, Unit 2 shall be placed in a MODE of operation where Containment is not required to be OPERABLE as described in Technical Specification 3.6.1, "Containment," no later than May 4, 2014. The first Unit 2 Type A test performed after the May 4, 1999, Type A test shall be performed prior to entering MODE 4 at the start of Unit 2, Cycle 18.

The revised wording of Exception 2 requires Braidwood, Unit 2, to be placed in a mode of operation where containment is not required to be operable no later than May 4, 2014. Braidwood, Unit 2, therefore is required to exit the Modes of operability for containment as described in Technical Specification 3.6.1, "Containment" (i.e., MODEs 1-4) no later than May 4, 2014. The NRC staff finds that this revision ensures that Unit 2 is not in a mode where containment is required to be operable beyond a 15-year period after the May 4, 1999, Type A, test was performed. The NRC staff finds that the revised wording is consistent with the basis for the Amendment No. 149 dated April 2, 2008 (ADAMS Accession No. ML080640290), which approved a one-time, five-year extension of the containment Type A test interval requirement, under 10 CFR Part 50, Appendix J, Option B, from 10 years to 15 years.

TS 5.5.16, requires the containment leakage rate testing program to be in accordance with the guidelines in RG 1.163, September 1995, (ADAMS Accession No. ML003740058) and NEI 94-01, Revision 0 (ADAMS Accession No. ML11327A025). NEI 94-01, Revision 0, Section 9.2.2, states that:

If the test interval ends while primary containment integrity is either not required or it is required solely for shutdown activities, the test interval may be extended indefinitely.

Since the revised TS does not change the 15-year test interval, which ends on May 4, 2014, and Braidwood, Unit 2, is required to be placed in in a MODE of operation where containment is not required no later than May 4, 2014, the NRC staff concludes that the Braidwood, Unit 2, test interval will end while containment integrity is not required. The NRC staff therefore concludes that the proposed extension of the Type A test performance meets the regulatory guidance in RG 1.163 and NEI 94-01.

The revised wording of Exception 2 also requires that the Type A test be performed prior to entering Mode 4. NEI 94-01, Revision 0, Section 9.2.2, further states that:

“... a successful Type A test shall be completed prior to entering the operating mode requiring primary containment integrity.

The NRC staff finds that the startup for Cycle 18 will be the first entry into Mode 4 following May 4, 2014. Therefore, the revised wording of Exception 2 requires the Type A test to be performed prior to entry into Mode 4 (defined in TS Table 1.1-1), where containment integrity is required. The NRC staff therefore concludes that the above regulatory guidance in RG 1.163 and NEI 94-01 is met.

Based on the above, the NRC staff concludes that the revised wording is acceptable because it continues to limit the interval of containment operability to the 15 years previously found acceptable. The NRC staff also concludes that the revised wording is acceptable because it is consistent with the guidance endorsed by the NRC staff in RG 1.163, September 1995, and NEI 94-01, Revision 0. The NRC staff therefore concludes that the application meets the requirements of GDC 16, "Containment Design," and 10 CFR Appendix J.

The NRC finds that the TS 5.5.16 change revises the administrative controls required by 10 CFR Part 50.36(5), to assure operation of the facility in a safe manner. Therefore, the NRC staff concludes that the requirements of 10 CFR Part 50.36(5) continue to be met.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Illinois State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility's components located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (78 FR 74183; dated December 10, 2013). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by

operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Joel S. Wiebe
Bryce Lehman
Roberto Torres

Date of issuance: March 13, 2014

M. Pacilio

- 2 -

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

Joel S. Wiebe, Senior Project Manager
Plant Licensing III-2 and
Planning and Analysis Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-456 and STN 50-457

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1. Amendment No. 175 to NPF-72
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ADAMS Accession No. ML13326A107

OFFICE	NRR/DORL/LPL3-2	NRR/DORL/LPL3-2	DSS/STSBITSB	DE/EMCB
NAME	JWiebe	SRohrer	RElliott	AMcMurtary
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NAME	RDennig	MYoung	TTate	
DATE	1/12/14	2/27/14	3/13/14	

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