

## Indian Point 3 3Q/2015 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

**Significance:** G Sep 30, 2015

Identified By: NRC

Item Type: FIN Finding

#### **Blocked Drains in the 480 Volt Switchgear Room**

The inspectors identified a Green finding (FIN) because Entergy allowed the Unit 3 480 volt switchgear room floor drains to become blocked such that they could not mitigate an internal flood postulated in Action and Condition Tracking Form 95-14218. Specifically, if both service water (SW) relief valves in the 480 volt switchgear room lifted, their flow rate would be greater than the as-found drain flow rate. This finding does not involve enforcement action because no violation of regulatory requirement was identified.

This finding was more than minor because it was associated with the protection against external factors attribute of the Mitigating Systems cornerstone, and adversely affected the cornerstone objective to ensure the capability of systems to respond to initiating events to prevent undesirable consequences. Specifically, the Unit 3 480 volt switchgear room floor drains were not capable of mitigating an internal flood hazard to prevent damage to the 480 volt switchgear, potentially resulting in core damage. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 4, "External Events Screening Questions," of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012, the inspectors determined this finding required a detailed risk assessment. A detailed risk assessment was conducted using the Unit 3 SDP External Event Notebook, which determined that there was a change in core damage frequency of low E-8 per reactor year (an increase in 1 in 100 million reactor years). Therefore, this performance deficiency was of very low safety significance (Green). The inspectors determined the finding does not have a cross-cutting aspect. Although Entergy did not thoroughly evaluate the Unit 2 blocked floor drain issue in 2011 to ensure the resolution addressed extent of condition, Entergy has improved their extent of condition evaluation guidance since 2012.

Inspection Report# : [2015003](#) (*pdf*)

**Significance:** G Sep 20, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### **Failure to Account for Elevated Battery Room Temperature Effects on Battery Service Life**

The team identified a finding of very low safety significance (Green) involving a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," because Entergy did not verify the adequacy of the safety-related battery test program. Specifically, Entergy did not adequately account for the effects of elevated temperature in the immediate vicinity of the No. 33 125 volts, direct current (Vdc) battery to ensure accurate and up-to-date determination of the battery's expected service life, in

accordance with the vendor manual. After identification, Entergy entered this issue into the corrective action program and contacted the battery vendor for additional guidance.

The performance deficiency was determined to be more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated the finding in accordance with IMC 0609, Appendix A, The Significance Determination Process for Findings at Power, Exhibit 2 – Mitigating Systems Screening Questions. The finding was determined to be of very low safety significance because it was a design deficiency confirmed not to result in a loss of operability.

This finding was not assigned a cross-cutting aspect because it was a historical design issue not indicative of current performance. Specifically, the associated vendor technical manual guidance was not changed within the last 3 years and there was no recent operating experience that was directly applicable to the performance deficiency.

Inspection Report# : [2015007](#) (*pdf*)

**Significance:**  Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Inadequate Corrective Action for Main Steam Safety Valve 46-3 Failure to Lift at Required Setpoint**

The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion XVI, “Corrective Action,” for Entergy’s failure to take corrective actions for a condition adverse to quality involving Unit 3 Main Steam Safety Valve (MSSV) 46-3. Specifically, MSSV 46-3 failed to meet its Technical Specification (TS) required lift setting during a surveillance test on March 22, 2015. This failure was documented in a condition report (CR) but closed for trending purposes. Additionally, Entergy personnel did not correct the failure of MSSV 46-3 to meet its TS required lift setting after it failed its as-found lift setting test on March 1, 2013.

The inspectors determined the performance deficiency was more than minor because it is associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, Entergy did not take corrective actions following the March 22, 2015, failure of MSSV 46-3, and previous corrective actions in 2013 were not effective in ensuring it would remain capable of lifting at its TS required setpoint. The inspectors determined that this finding is of very low safety significance (Green) because the finding does not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety-significant in accordance with Entergy’s maintenance rule program for greater than 24 hours. Specifically, of the 20 valves tested in 2015, 16 passed the as-found lift test and there was no loss of safety function. The inspectors determined that this finding had a Problem Identification and Resolution cross-cutting aspect related to Evaluation, because Entergy did not thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, the CR documenting the MSSV 46-3 failure was closed for trending purposes and as a result, a thorough evaluation of the cause was not completed [P.2].

Inspection Report# : [2015002](#) (*pdf*)

**Significance:** N/A Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Incomplete 50.73 Report Associated with Failures of Main Steam Safety Valves**

The inspectors identified a Severity Level IV NCV of 10 CFR 50.9(a); in that, Entergy did not provide complete information in a report submitted per 10 CFR 50.73(a)(2)(i)(B). Specifically, a Licensee Event Report (LER) submitted on April 27, 2015, which reported three MSSV test failures (MS-46-2, MS-45-4, MS-47-4) that occurred on February 27, 2015, did not discuss the failure of MSSV 46-3, which also failed its TS as-found lift setting test and was declared inoperable on March 22, 2015. MSSV 46-3 was inoperable for greater than its TS allowed outage time, which is a condition prohibited by TSs, and therefore is required to be reported to the NRC.

The inspectors evaluated this performance deficiency in accordance with the Traditional Enforcement process. In accordance with Section 2.2.2.d of the NRC Enforcement Policy, the inspectors determined that the performance deficiency identified with the reporting aspect of the event is a Severity Level IV violation, because it is of more than minor concern, with relatively inappreciable potential safety significance and is related to findings that were determined to be more than minor issues. Specifically, this issue is related to a more than minor corrective action finding, which is documented in Section 1R22 of this report. In accordance with IMC 0612, Appendix B, this traditional enforcement issue is not assigned a cross-cutting aspect.

Inspection Report# : [2015002](#) (pdf)

**Significance:**  Jun 24, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Failure to Correct a Degraded Condition of Fire Protection System Solenoid Valve SOV-230-1**

Green. The inspectors identified a Green NCV of Condition 2.H of the Indian Point Unit 3 Facility Operating License DPR-64, "Fire Protection Program," for failure to promptly identify, report, and correct a condition adverse to fire protection. Specifically, solenoid valve (SOV)-230-1, associated with the deluge valve for the 32 main transformer (MT), was documented to have opened during its 2-year deluge activation tests on April 7, 2011, April 2, 2013, and March 24, 2015, but did not close as designed after the deluge system actuated. This condition was not corrected, and recurred on May 9, 2015, when the deluge system actuated in response to a fire on the 31 MT. Entergy entered this issue into the corrective action program (CAP) (condition report (CR)-IP3-2015-02921), and determined a clogged orifice in the SOV pressure switch prevented the SOV from de-energizing and going closed.

The performance deficiency was determined to be more than minor because it is associated with the Protection Against External Factors attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone's objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, water intrusion into the switchgear room can challenge the reliability of the safety-related electrical equipment required to respond to a reactor transient. The inspectors screened the finding for significance using the screening questions in IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems," and Exhibit 4, "External Events," and determined that this performance deficiency required a Detailed Risk Evaluation because the potential existed for enough water leakage into the switchgear room to cause a loss of all safety-related power and station blackout (SBO) condition. The Detailed Risk Evaluation determined that this finding was of very low safety significance (Green) with an estimated increase in core damage frequency in the low E-7 per reactor year range (an increase of 1 in 10 million reactor years). The inspectors determined the finding had a cross-cutting aspect in the Human Performance cross-cutting area, "Challenge the Unknown," because Entergy did not stop and fully explore an uncertain condition with SOV-230-1 when it failed to closed on three occasions since April 2011. Entergy replaced the SOV, but did not determine that the cause was a clogged pressure switch orifice until after the May 9, 2015, 31 MT fire event. [H.11] (Section 2.c)

Inspection Report# : [2015010](#) (pdf)

**Significance:**  Feb 18, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **Inadequate Analysis of Safety Injection Make-up Capability**

The team identified a finding of very low safety significance, involving a non-cited violation of Indian Point Units 2 and 3 Facility Operating Licenses Conditions 2.K and 2.H, respectively, for failure to implement and maintain in effect all provisions of the approved Fire Protection Program. Specifically, Entergy revised the safe shutdown (SSD) methodology to use the safety injection system as a credited reactor coolant system make up source, but the thermo hydraulic analysis used to validate the revised method was not consistent with the SSD analysis or with the operating procedures. Entergy entered this issue into its corrective action program and revised the thermo-hydraulic analysis prior to the end of this inspection to demonstrate the adequacy of the new methodology.

This finding was more than minor because it was similar to Example 3.k of NRC Inspection Manual Chapter (IMC) 0612, Appendix E, "Examples of Minor Issues," and was associated with the Protection Against External Factors (e.g., Fire) attribute of the Mitigating Systems Cornerstone and affected the objective to ensure the reliability and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The team performed a Phase 1 Significance Determination Process (SDP) screening, in accordance with IMC 0609, Appendix F, "Fire Protection SDP." This finding affected the post-fire SSD category, and was determined to have a low degradation rating because a subsequent analysis verified that safety injection was sufficient to maintain the reactor coolant system sub-cooled. This finding had a cross-cutting aspect in the area of Human Performance, Documentation, because Entergy did not maintain complete, accurate, and up to date documentation used as critical design inputs for a thermo-hydraulic analysis.

Inspection Report# : [2014011](#) (*pdf*)

**Significance:** G Feb 18, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **Inadequate Fire Barrier Analysis**

The team identified a finding of very low safety significance, involving a non-cited violation of Indian Point Unit 3 Facility Operating License Condition 2.H, for failure to implement and maintain in effect all provisions of the approved Fire Protection Program. Specifically, Entergy evaluated a new fire barrier and determined that it provided adequate separation between redundant safe shutdown (SSD) trains within the same fire area, but the barrier did not satisfy regulatory requirements, and was not included in the barrier surveillance program. Entergy performed a more detailed barrier evaluation prior to the end of this inspection and created a new fire area using the guidance in Generic Letter 86-10, "Implementation of Fire Protection Requirements." Entergy entered this issue into its corrective action program and re-evaluated the barrier prior to the end of this inspection to verify its adequacy to withstand the hazards in the area, revised the combustible control program for adjacent areas, and added it to the barrier surveillance program.

This finding was more than minor because, if left uncorrected, it could have become a more significant safety issue because combustible loading or barrier integrity may not have been adequately maintained in the future, and was associated with the Protection Against External Factors (e.g., Fire) attribute of the Mitigating Systems Cornerstone and affected the objective to ensure the reliability and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The team performed a Phase 1 Significance Determination Process (SDP) screening, in accordance with NRC Inspection Manual Chapter 0609, Appendix F, "Fire Protection SDP." This finding affected the post-fire SSD category, and screened to very low safety significance. The team determined that it did not affect the ability to reach and maintain a stable plant condition within the first 24 hours of a fire event because the fire barrier was not degraded during the inspection period and no postulated fires were identified that could breach the new fire barrier. This finding had a cross-cutting aspect in the area of Human Performance, Design Margins.

Inspection Report# : [2014011](#) (*pdf*)

**Significance:**  Feb 18, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Inadequate Post-Fire Safe Shutdown Procedure**

The team identified a finding of very low safety significance, involving a non-cited violation of Indian Point Unit 3 Facility Operating License Condition 2.H, for failure to implement and maintain in effect all provisions of the approved Fire Protection Program. Specifically, Entergy did not ensure that design changes which revised the safe shutdown (SSD) methodology were adequately translated into operating procedures. Entergy entered this issue into its corrective action program and revised its operating procedures and associated SSD methodology prior to the end of this inspection.

This finding was more than minor because it was associated with the Protection Against External Factors (e.g., Fire) attribute of the Mitigating Systems Cornerstone and affected the objective to ensure the reliability and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The team performed a Phase 2 Significance Determination Process (SDP) analysis, in accordance with NRC Inspection Manual Chapter 0609, Appendix F, "Fire Protection SDP." This finding affected the post-fire SSD category, and screened to very low safety significance. The team determined that this issue did not affect the ability to reach and maintain a stable plant condition within the first 24 hours of a fire event because no credible fire scenario was identified that could result in a loss of the credited make-up flow path. This finding had a cross-cutting aspect in the area of Human Performance, Design Margins.

Inspection Report# : [2014011](#) (*pdf*)

**Significance:**  Feb 18, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Inadequate Alternative Post-Fire Safe Shutdown Procedure**

The team identified a finding of very low safety significance, involving a non-cited violation of Indian Point Unit 3 Facility Operating License Condition 2.H, for failure to implement and maintain in effect all provisions of the approved Fire Protection Program. Specifically, Entergy did not have an adequate post-fire operating procedure for its alternative shutdown capability to ensure that post-fire safe shutdown (SSD) equipment was isolated from the effects of fire in Appendix R, Section III.G.3, fire areas. Entergy entered this issue into its corrective action program and revised its operating procedures prior to the end of this inspection.

This finding was more than minor because it was similar to Example 3.k of NRC Inspection Manual Chapter (IMC) 0612, Appendix E, "Examples of Minor Issues," and was associated with the Protection Against External Factors (e.g., Fire) attribute of the Mitigating Systems Cornerstone and affected the objective to ensure the reliability and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The team performed a Phase 3 Significance Determination Process (SDP) analysis, in accordance with NRC IMC 0609, Appendix F, "Fire Protection SDP." This finding affected the post-fire SSD category, and screened to very low safety significance. The team determined that this issue was of very low safety significance because of the low frequency of a fire, a negligible chance of control room evacuation, and the low chance of core damage associated with those fire areas where a fire could damage the charging system and make it unavailable. This finding did not have a cross-cutting aspect because it was a legacy issue and was considered to not be indicative of current licensee performance.

Inspection Report# : [2014011](#) (*pdf*)

**Significance:**  Dec 31, 2014

Identified By: NRC

Item Type: FIN Finding



### **Licensed Operator Requalification Remedial Exam Standard Adherence**

The inspectors identified a Green finding (FIN) because Entergy did not adhere to their procedural standards for generating remedial written exams. Entergy failed to follow the guidance as stated in their procedure EN-TQ-201-03, "Systematic Approach to Training," Section 5.4, regarding remedial exam construction when an operator was retested on April 25, 2013.

The inspectors determined that Entergy's failure to adhere to their remedial examination standards in EN-TQ-201-03 was a performance deficiency. The inspectors determined that the finding was more than minor because it was associated with the human performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the finding affected the quality and level of difficulty of the remedial quiz which potentially impacted Entergy's ability to appropriately evaluate the licensed operator. The inspectors determined that this issue had a cross-cutting aspect in Human Performance, Procedure Adherence, because Entergy did not follow their procedural standards for generating remedial written exams.

Inspection Report# : [2014005](#) (*pdf*)

**Significance:** N/A Dec 31, 2014

Identified By: Licensee

Item Type: AV Apparent Violation

### **Incomplete and Inaccurate Medical Information Provided by the Licensee Which Impacted an Operator's License Renewal**

Entergy identified two AVs of NRC requirements related to Entergy not notifying the NRC within 30 days of a change in a licensed reactor operator's (RO's) medical condition and to providing information to the NRC pertaining to renewing a RO license that was not complete and accurate in all material respects. Specifically, Entergy identified an AV of Title 10 of the Code of Federal Regulations (10 CFR) 50.74, "Notification of Change in Operator or Senior Operator Status," for Entergy's failure to notify the NRC within 30 days after learning, on October 25, 2012, that a Unit 3 RO had a permanent disability or illness (sleep apnea). Entergy also did not request an amended license with a condition to account for the medical issue, resulting in the RO performing licensed duties without a properly restricted license. Additionally, Entergy identified an AV of 10 CFR 50.9, "Completeness and Accuracy of Information," pertaining to Entergy's failure to provide information to the NRC in the RO's license renewal application in that it did not specify that the RO had a medical condition (sleep apnea) that required a restriction [for use of a continuous positive airway pressure (CPAP)]. The NRC, in turn, issued a license renewal that did not contain the necessary restriction. Compliance was restored on July 7, 2014, when Entergy submitted a letter to the NRC with a Form 396 indicating the new restriction for the use of a CPAP machine. On August 14, 2014, the NRC issued a license amendment with the new restriction. These issues were entered into Entergy's corrective action program (CAP) as condition report (CR)-IP3-2014-1416 and CR-IP2-2014-4202.

The inspectors determined that Entergy's failure to report a change in a licensed operator's permanent medical condition to the NRC and subsequently provide complete and accurate information to the NRC was a performance deficiency that was within their ability to foresee and correct and should have been prevented. The inspectors determined that traditional enforcement applies, as the issue impacted the NRC's ability to perform its regulatory function. The inspectors screened the issue using Section 6.4.c.4(b) of the NRC Enforcement Policy and preliminarily determined that these AVs meet the definition of a Severity Level III violation because Entergy failed to report a condition that would have required the addition of a license restriction within the required timeframe and, again, for the RO's license renewal. No associated Reactor Oversight Process finding was identified and no cross-cutting aspect was assigned. These issues constitute AVs in accordance with the NRC's Enforcement Policy, and the final significance will be dispositioned in future correspondence. Because the significance determination of this issue is not complete, it is identified as TBD.

Inspection Report# : [2014005](#) (*pdf*)

**Significance:**  Jul 20, 2012

Identified By: NRC

Item Type: VIO Violation

### **Failure to Protect Safe Shutdown Equipment from the Effects of Fire**

The inspectors identified a finding of very low safety significance (Green), involving a cited violation of Indian Point Unit 3 Operating License Condition 2.H to implement and maintain all aspects of the approved fire protection program. Specifically, ENO failed to protect required post-fire safe shutdown components and cabling to ensure one of the redundant trains of equipment remained free from fire damage as required by 10 CFR Part 50, Appendix R, Section III.G.2. In lieu of protecting a redundant safe shutdown train, ENO utilized unapproved operator manual actions to mitigate component malfunctions or spurious operations caused by postulated single fire-induced circuit faults. ENO submitted an exemption request (M1090760993) on March 6, 2009, in which it sought exemption from requirements of Paragraph III.G.2, to permit the use of OMAs upon which it had been relying for safe-shutdown in a number of fire areas. However, several OMAs within the exemption request were denied because ENO failed to demonstrate that the OMAs were feasible and reliable, or to appropriately evaluate fire protection defense-in-depth. ENO's performance deficiency delayed achieving full compliance with fire protection regulations and adversely affected post-fire safe shutdown. ENO has entered this issue into the corrective program for resolution. The inspectors found the manual actions in addition to roving fire watches in all affected areas to be reasonable interim compensatory measures pending final resolution by ENO.

ENO's failure to protect components credited for post-fire safe shutdown from fire damage caused by single spurious actuation is considered a performance deficiency. The performance deficiency was more than minor because it affected the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to an external event to prevent undesirable consequences in the event of a fire. Specifically, the use of operator manual actions during postfire safe shutdown is not as reliable as normal systems operation which could be utilized had the requirements of 10 CFR 50, Appendix R, Section III.G.2 been met and, therefore, prevented fire damage to credited components and/or cables. The inspectors used IMC 0609, Appendix F, Fire Protection Significance Determination Process, Phase 1 and a Senior Reactor Analyst conducted a Phase 3 evaluation, to determine that this finding was of very low safety significance (Green). This finding does not have a cross cutting aspect because the performance deficiency occurred greater than three years ago when the exemption request was submitted to the NRC on March 6, 2009, and is not indicative of current licensee performance.

Inspection Report# : [2012008](#) (*pdf*)

## **Barrier Integrity**

## **Emergency Preparedness**

**Significance:**  Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **Failure to Maintain the Effectiveness of Emergency Plan Due to an Inadequate Basis for Emergency Action Level Thresholds**

The inspectors identified a Green NCV of 10 CFR 50.54(q)(2) for Entergy's failure to maintain the effectiveness of an emergency plan that meets the requirements in Appendix E to Part 50 and the planning standards of 50.47(b).

Specifically, Entergy did not use accurate facility effluent parameters in its emergency classification and emergency action level (EAL) scheme. Entergy subsequently determined an acceptable facility parameter and corrected the EAL scheme.

This finding was determined to be more than minor because it is associated with the Procedure Quality attribute of the Emergency Preparedness cornerstone and adversely affected the cornerstone objective to ensure that Entergy is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The inspectors determined this finding was an emergency classification system finding and therefore evaluated the finding in accordance with IMC 0609, Appendix B, Section 5.4, “10 CFR 50.47(b)(4), Emergency Classification System.” The finding was determined to be of very low safety significance (Green) because the issue had a very low likelihood of resulting in an early General Emergency (GE) declaration, but the finding more closely fit the “would result in unnecessary classification” significance category rather than the “would result in unnecessary protective actions for the public” significance category. Specifically, the inspectors considered that (1) the inadequate concentration threshold is used as a backup to the effluent threshold which reflects actual plant vent flow, (2) the calculation input discrepancy is small compared to the uncertainty of the setpoint calculation, and (3) although the protective action recommendation (PAR) would be made before offsite dose exceeded the Environmental Protection Agency protective action guideline, an early PAR during an actual release sequence would still serve to provide dose savings to the public. The inspectors determined that the finding has a cross-cutting aspect in the area of Human Performance, Challenge the Unknown, because Entergy did not stop when faced with uncertain conditions of the plant vent flowrates and EAL threshold calculation assumptions [H.11].

Inspection Report# : [2015002](#) (*pdf*)

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## Occupational Radiation Safety

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## Public Radiation Safety

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## Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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## Miscellaneous

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