

## Duane Arnold 4Q/2015 Plant Inspection Findings

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### Initiating Events

**Significance:**  Dec 31, 2015

Identified By: NRC

Item Type: FIN Finding

**Failure to Follow Temporary Configuration Control Procedure.**

The inspectors identified a finding of very low safety significance for the licensee's failure to follow procedure EN-AA-205-1102, "Temporary Configuration Changes," Revision 6. Specifically, the licensee constructed a shaft housing enclosure on the "B" condensate pump without applying the rigor provided by the temporary configuration change (TCC) process. This resulted in water intrusion into the "B" condensate pump lower motor bearing. This finding does not involve enforcement action because no violation of a regulatory requirement was identified. The licensee entered the inspectors concerns into the corrective action program (CAP) as condition report (CR) 2100521. Corrective actions included the performance of an apparent cause evaluation and the creation of a form to document engineering positions with respect to TCC applicability.

The inspectors determined that the failure of the licensee to follow procedure EN AA 205-1102 to document the addition of the "B" condensate pump shaft housing shield and forced air blower as TCCs was a performance deficiency. The finding was determined to be more than minor because, if left uncorrected, it could become a more significant safety concern. Specifically, the addition of the shaft housing shield resulted in a very high humidity environment which resulted in water passing through the lower motor shaft seal and entering the lower motor bearing oil reservoir. This resulted in the need for repetitive feeding and bleeding of the lower motor bearing oil reservoir to prevent emulsification of the oil. The feeding and bleeding of the "B" condensate pump lower motor bearing oil reservoir was an evolution that could have resulted in bearing damage, pump trip, and reactor scram. The finding was determined to be of very low safety significance because the finding did not result in exceeding the reactor coolant system leak rate for a small loss of coolant accident, cause a reactor trip, involve the complete or partial loss of a support system that contributes to the likelihood of or caused an initiating event, and did not affect mitigation equipment. This finding was associated with the cross-cutting aspect of operating experience in the area of problem identification and resolution because the licensee failed to implement relevant internal operating experience in a timely manner.

Inspection Report# : [2015004](#) (*pdf*)

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### Mitigating Systems

**Significance:**  Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**FAILURE TO SCOPE SAFETY RELATED AND NONSAFETY RELATED BREAKER INTO THE MAINTENANCE RULE.**

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50.65(a)(1), 10 CFR 50.65(a)(2), and 10 CFR 50.65(b), due to the licensee's failure to scope the load-shed function of safety related

and nonsafety related 4160 volt (V) and 480V breakers into the Maintenance Rule. The load-shed function of the breakers was to ensure upon receipt of load-shed signal that the required breakers would separate from the associated essential buses such that the Standby Diesel Generators (SBDGs) could close into the vital buses. The licensee entered the inspectors' concerns into the CAP as CR 2065346. Corrective actions included scoping those breakers of concern into the Maintenance Rule program, establishing breaker performance criteria, and performing a review of past breaker failures against the established criteria.

The performance deficiency was determined to be more than minor because it impacted the Mitigating Systems Cornerstone attribute of Equipment Performance, 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) with respect to the SBDGs. Because the finding did not affect the design or qualification of the SBDGs, nor did it represent a loss of a system or function, the finding screened as very low safety significance. This finding was not indicative of licensee performance since the scoping aspects were determined in 1994, which was prior to the rule's effective date of July 10, 1996. Therefore, no cross-cutting aspect was assigned to this finding. Inspection Report# : [2015004](#) (*pdf*)

**Significance:**  Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**FAILURE TO DECLARE HIGH PRESSURE COOLANT INJECTION AND REACTOR CORE ISOLATION COOLING INOPERABLE WHEN THE HIGH PRESSURE COOLANT INJECTION AND REACTOR CORE ISOLATION COOLING PUMP SUCTION WAS INOPERABLE**

The inspectors identified a finding of very low safety significance, with two examples, and an associated NCV of Technical Specifications (TS) Sections 3.3.5.1, Condition D and 3.3.5.2, Condition D, for failure to initiate required TS action statements 3.3.5.1.D.1 and 3.3.5.2.D.1. Specifically, the licensee failed to declare the high pressure coolant injection (HPCI) and the reactor core isolation cooling (RCIC) systems inoperable when the automatic HPCI/RCIC pump suction swap function on low condensate storage tank (CST) level was revealed to be inoperable during surveillance testing. The licensee entered the inspectors concerns into the CAP as CR 2080489 and replaced the failed time delay relay.

The inspectors determined the failure to declare the HPCI/RCIC systems inoperable when the pump suction swap function on low CST level failed during surveillance testing was a performance deficiency because it resulted in the licensee's failure to implement TS required actions and the cause was reasonably within the licensee's ability to foresee and should have been prevented. The performance deficiency was determined to be more than minor and a finding because if left uncorrected, failing to implement TS required actions reduced the margin of safety and had the potential to lead to significant safety concerns. The finding was determined to be of very low significance because the CST was assumed to contain sufficient inventory for HPCI and RCIC to perform their function for most scenarios. This finding was associated with the cross-cutting aspect of conservative bias in the area of human performance because the licensee failed to use decision-making practices that emphasize prudent choices over those that are simply allowable when the licensee failed to conservatively evaluate unexpected surveillance test results.

Inspection Report# : [2015004](#) (*pdf*)

**Significance:** N/A Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**FAILURE TO SATISFY 10 CFR PART 50.73 REPORTING REQUIREMENTS FOR A CONDITION PROHIBITED BY TECHNICAL SPECIFICATIONS AND FOR A CONDITION THAT COULD HAVE PREVENTED FULFILLMENT OF A SAFETY FUNCTION.**

The inspectors identified a Severity Level IV NCV of Title 10 of the Code of Federal Regulations (CFR), Section

50.73, "Licensee Event Report System." Specifically, the licensee failed to submit a required Licensee Event Report within 60 days after the discovery of an event that was reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition that was prohibited by the plant's TS and 10 CFR 50.73(a)(2)(v)(B) as a condition that could have prevented fulfillment of a safety function. The licensee documented the inspectors' concern into the CAP as CR 2099065. Planned corrective actions included the performance of an apparent cause evaluation for the failure to recognize the reportable condition and to submit a licensee event report.

This issue was determined to be more than minor because the NRC relies on licensees to identify and report conditions or events meeting the criteria specified in the 10 CFR 50.73 in order to perform its regulatory function. The inspector's previously determined in Section 1R15 of this report that the underlying issue (i.e., the failure of the HPCI/RCIC suction swap function as discovered during surveillance requirement testing) was a finding of very low safety significance. Consistent with the guidance in Section 6.9, Paragraph d.9, of the NRC Enforcement Policy, the violation associated with this finding was determined to be a Severity Level IV Violation. No cross cutting aspect was assigned to this traditional enforcement violation.

Inspection Report# : [2015004](#) (*pdf*)

**Significance:**  May 01, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**INAPPROPRIATE DIESEL GENERATOR MAINTENANCE PROCEDURE.**

The inspectors identified a finding of very low significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to ensure that activities affecting quality were prescribed by documented procedures of a type appropriate to the circumstances. Specifically, the licensee implemented GENERA-F010-01, "1E053A2 (B2) Flange Inspection," Section W, Revision 5, Step 5.1.3.3.b as a corrective action to NCV 05000331/2014009-02, in order to ensure proper alignment of the 1E053A2 (B2) flange. The procedure was inappropriate for the circumstances because the instructions, as written, in Step 5.1.3.3.b would not result in meeting the acceptance criteria for flange alignment listed in GENERA-F010-01, "1E053A2 (B2) Flange Inspection," Section W, Revision 5, Attachment 8. The licensee entered this issue into the CAP as condition report (CR) 02041369.

The inspectors determined the licensee's failure to provide procedures of a type appropriate to the circumstances to assure that for a significant condition adverse to quality, the cause of the condition was determined and corrective actions were taken to preclude repetition was a performance deficiency warranting further review. The inspectors determined that this finding was more than minor because it affected the Mitigating Systems Cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Misalignment of the flanges could lead to excessive oil leak that rendered the diesel generator inoperable. The inspectors determined the finding was of very low safety significance (Green) because the finding was not a deficiency affecting the design or qualification of a mitigating system, structure or component and did not result in a loss of operability or functionality. In addition, the finding did not represent a loss of system or function, did not represent an actual loss of function of a least a single train for longer than its technical specification allowed outage time, and did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significance. The inspectors determined this finding had a cross cutting aspect in the area of PI&R, specifically resolution, because licensee personnel failed to take effective corrective actions to ensure that the resolutions address causes and extent of conditions commensurate with their safety significance [P.3].

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

**Significance:** N/A May 01, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**FAILURE TO CORRECTLY UPDATE THE UPDATED FINAL SAFETY ANALYSIS REPORT.**

The inspectors identified a Severity Level IV NCV of 10 CFR 50.71(e) for failure to assure that the information included in the last update of the updated final safety analysis (UFSAR) report contained the latest information developed. The licensee implemented a change to the UFSAR, in preparation for License Amendment 243 that did not contain the latest information developed. Specifically, Section 5.4.6.1 (page 5.4–30 of Revision 17) was updated with a note that stated the reactor core isolation cooling system was not safety-related. In fact, the reactor core isolation cooling system had always been designated as safety-related. The licensee entered this issue into the CAP as CR 01974995 and prepared an updated final safety analysis report (UFSAR) change that removed the statement that the reactor core isolation cooling system was not safety-related.

The inspectors determined that the update to the UFSAR with incorrect information was a performance deficiency in accordance with IMC 0612, “Power Reactor Inspection Reports,” Appendix B, “Issue Screening,” issued on September 7, 2012. The inspectors concluded that traditional enforcement applied because the failure to correctly update the UFSAR impacted the regulatory process. The Enforcement Policy, dated February 4, 2015, Section 6.1.d.3, gave the example that if, “a licensee fails to UFSAR as required by 10 CFR 50.71(e) but the lack of up-to-date information has not resulted in any unacceptable change to the facility or procedures;” then this was a Severity Level IV violation. In this case, the UFSAR was updated incorrectly and did not, “result in any unacceptable change to the facility or procedures.” The inspectors determined this to be a similar example and therefore was more than minor and a Severity Level IV violation. This violation was not associated with a finding that was evaluated by the significance determination process. Therefore, a cross-cutting aspect was not assigned to this traditional enforcement violation. Inspection Report# : [2015007](#) (*pdf*)

**Significance:** G Feb 13, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Failure to Identify and Evaluate the Effects of Vessel Overfill Scenario (Section 1R05.6.b)**

The inspectors identified a finding of very-low safety significance (Green), and an associated NCV of Title 10, Code of Federal Regulations (CFR) 50.48(c), and National Fire Protection Association Standard 805, Section 2.4.3.2 for the licensee’s failure to address in the Fire Probabilistic Risk Assessment (PRA) the risk contribution with all potentially risk-significant fire scenarios. Specifically, the licensee did not address potential damage to safety relief valves (SRVs), or the SRV tailpipes as a result from fire induced overfill of the reactor pressure vessel. The licensee entered this issue into their Corrective Action Program to review the multiple spurious operations Expert Panel report, and properly disposition the scenario.

The inspectors determined that the performance deficiency was more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of Protection against External Factors (i.e., fire), and it affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the missed failure mechanism for the SRVs had the potential to impact the ability to achieve safe and stable conditions. In accordance IMC 0609, Appendix F, “Fire Protection SDP,” Attachment 1, Step 1.6.1, “Screen by Licensee PRA-Based Safety Evaluation,” the inspectors were able to use the Licensee’s PRA to evaluate the safety significance of the finding. The increase in core damage frequency (CDF) as a result of the identified scenario was found to be approximately 2.6E-7 per year; therefore, the inspectors concluded that this finding was of very-low safety significance (Green). This finding did not have a cross-cutting aspect because it was not representative of current licensee performance.

Inspection Report# : [2015008](#) (*pdf*)

**Significance:** W Jan 08, 2015

Identified By: Self-Revealing

Item Type: VIO Violation

**FAILURE TO INSTALL TORUS COATING IN ACCORDANCE WITH ESTABLISHED PROCESSES.**

White. A violation of 10 Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion IX, “Control of Special Processes,” was self-revealed for the failure to install the torus coating under suitable controlled conditions. Specifically, inadequate quality controls during the application of the torus coating resulted in unqualified torus coating in excess of the debris loading design margin of the emergency core cooling system (ECCS) suction strainers. This finding was entered into the licensee’s Corrective Action Program (CAP) to evaluate and resolve, including removal of the unqualified torus coating in excess of design margin.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating System Cornerstone attribute of design control 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 finding has been preliminarily determined to be White, a finding of low to moderate safety significance, because it affected the function of the low pressure ECCSs. The team determined that this finding had a cross-cutting aspect in the area of Human Performance because licensee senior managers did not ensure supervisory and management oversight of work activities, including contractors and supplemental personnel.

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

Inspection Report# : [2015011](#) (*pdf*)

**Significance:**  Jan 08, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Inadequate Coating Strainer Debris Loading Calculation (Section 40A5.1.d(2))**

• Green. The team identified a finding having very-low safety significance and a Non Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the licensee’s failure to account for all unqualified coating debris available for transport to the ECCS strainers. Specifically, the licensee relied on assumptions that were inconsistent with their licensing basis, resulting in a non conservative unqualified coating debris loading value which was used in the strainer hydraulic calculations. This finding was entered into the licensee’s CAP to evaluate and resolve, including correction of the affected calculations.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating System Cornerstone attribute of design control 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 finding screened as very-low safety significance (Green) because it did not result in the loss of operability or functionality. Specifically, the licensee removed conservatism from the calculations, added the additional unqualified coating debris loading, and reasonably determined the system remained operable. The unqualified torus coating debris associated with the apparent violation did not affect this finding. The team did not identify a cross-cutting aspect associated with this finding because it was not indicative of current licensee performance due to the age of the performance deficiency. (Section 40A5.1.d(2))

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

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## Barrier Integrity

**Significance:**  Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**FAILURE TO ACCOMPLISH A PROCEDURE FOR AN ACTIVITY AFFECTING QUALITY IN A**

**MANNER APPROPRIATE TO THE CIRCUMSTANCES.**

A finding of very low safety significance and an associated NCV of Title 10, Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors for the licensee's failure to identify a degraded condition warranting compensatory measures/actions for assuring operability, as required by Section 4.3.12 of procedure EN-AA-203-1001, "Operability Determinations/Functionality Assessments." Specifically, on April 29 and April 30, 2015, the licensee failed to accomplish procedure EN-AA-203-1001 in a manner appropriate to the circumstances to assess equipment operability following the identification of an unexpected condition associated with the flow indication controller (FIC) on the "B" Standby Gas Treatment (SBGT) subsystem. Following completion of the surveillance testing, the "B" SBGT system was initially declared operable and fully qualified. In response to questions from the inspectors, the licensee subsequently declared the "B" SBGT system operable but degraded. The licensee entered the issues associated with the FIC into the Corrective Action Program (CAP) as condition report (CR) 02044191 and CR 02044702, and entered the inspectors' concerns into the CAP as CR 02052508.

The performance deficiency was determined to be more than minor safety significance in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because if left uncorrected, failing to properly assess operability as required by procedure could potentially result in incorrect/untimely operability conclusions, and the failure to take action to correct degraded or deficient conditions as required by the Technical Specifications. Specifically, the performance deficiency resulted in not properly assessing operability of the "B" SBGT subsystem that resulted in the failure to implement appropriate compensatory measures/actions to assure operability until final corrective actions were taken. The performance deficiency is associated with the Barrier Integrity attribute of systems, structures, and components and Barrier Performance associated with standby gas trains, which adversely affects the cornerstone objective. (To provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events.) The inspectors applied IMC 0609, Attachment 4, "Initial Characterization of Findings," issued June 19, 2012, to this finding. The inspectors answered "No" to all questions within Table 3, "[Significance Determination Process] SDP Appendix Router," and transitioned to IMC 0609, Appendix A, "The SDP for Findings At-Power," issued June 19, 2012. Per Exhibit 3, "Barrier Integrity Screening Questions," the inspectors determined that because the finding only represented a degradation of the radiological barrier function provided by the SBGT system, the finding screened as very-low safety significance (Green). This finding was associated with the cross-cutting aspect of conservative bias in the area of Human Performance, because the licensee did not use decision-making practices that emphasize prudent choices over those that are simply allowable. Specifically, the licensee's decision making practices in implementing EN-AA-203-1001 were non-conservative, and failed to identify the FIC-5828B process deviation as a degraded condition warranting compensatory measures/actions which resulted in incorrectly declaring the "B" SBGT subsystem operable and fully qualified.

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

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## Emergency Preparedness

**Significance:**  Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **FAILURE TO CLASSIFY AND DECLARE A NOTIFICATION OF UNUSUAL EVENT.**

The inspectors identified a finding of very-low safety significance (Green) and an associated NCV of Title 10 of the Code of Federal Regulations (CFR) 50.54(q)(2), and 10 CFR 50.47(b)(4) for the failure of the licensee to classify and declare a Notification of Unusual Event. Specifically, on June 30, 2014, the licensee failed to classify and declare a

Notification of Unusual Event after a control room instrument peaked at a wind speed that exceeded the Unusual Event Emergency Classification Level threshold for 4 seconds. The licensee entered the issue into the corrective action program (CAP) as condition report (CR) 01975495. Corrective actions included procedure changes to ensure available indications for wind speed are monitored during high wind events.

The failure to classify and declare a Notice of Unusual Event when conditions warranted was a performance deficiency. The finding was more than minor because it adversely affected the emergency response organization (ERO) performance attribute of the Emergency Preparedness (EP) cornerstone objective to ensure that licensees are capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Because the finding only involved a failure to declare a Notification of Unusual Event, the finding screened as being of very low safety significance (Green). This finding was associated with the cross-cutting aspect of avoid complacency in the area of Human Performance, because control room operators did not walk-down instrumentation that was available to them in the control room.

Inspection Report# : [2015001](#) (*pdf*)

## Occupational Radiation Safety

**Significance:**  Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **FAILURE TO MAINTAIN BREATHING AIR QUALITY REQUIREMENTS FOR SCBAs.**

The inspectors identified a finding of very-low safety significance (Green), and an associated NCV of 10 CFR 20.1703, "Use of Individual Respiratory Protection Equipment," for the licensee's failure to supply breathing air in accordance with manufacturer requirements, which voided the National Institute for Occupational Safety and Health (NIOSH) approval of their self-contained breathing apparatuses (SCBAs). This issue was entered into the licensee's CAP as CR 2056826. Corrective actions included obtaining an air sample to be sent for analysis and ensuring that the required dew point would be maintained in compliance with the manufacture's specifications.

The performance deficiency was determined to be of more than minor safety significance in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because, if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, the introduction of excessive moisture to the SCBA could have resulted in the sudden loss of all breathing air to the individual. The removal of the SCBA in this occurrence could have led the individual to be exposed to both radiological and non-radiological airborne hazards. The inspectors also reviewed IMC 0612, Appendix E, "Examples of Minor Issues," dated August 11, 2009, but did not identify any similar examples. The finding was assessed using IMC 0609, Appendix C, "Occupation Radiation Safety SDP," dated August 19, 2008, and determined to be of very-low safety significance (Green) because it was not an as-low-as-reasonably-achievable planning issue, there were no overexposures, nor substantial potential for overexposures, and the licensee's ability to assess dose was not compromised. The inspectors determined that the cause of the issue had a cross-cutting aspect of resources in the human performance area. Specifically, the licensee did not ensure that procedures for testing breathing air quality were in compliance with manufacturer requirements, and therefore, the NIOSH approval for the SCBAs was void.

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

**Significance:** N/A Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **FAILURE TO REPORT REQUIRED MONITORING RESULTS TO THE NRC.**

The inspectors identified a Severity Level (SL) IV NCV of 10 CFR 20.2206 for the licensee's failure to report results of individual radiation exposure monitoring for individuals required to be monitored by 10 CFR 20.1502. Specifically, on or before April 30, 2014, the licensee failed to report results for all individuals requiring monitoring for the calendar year 2013 to the NRC's Radiation Exposure Information and Reporting System (REIRS) database. The issue was entered into the licensee's CAP as CR 02028468. Immediate corrective actions included the resubmittal of radiation exposure data to the REIRS database, which included radiation exposure for all individuals that were required to be monitored.

The violation of 10 CFR 20.2206 was assessed in accordance with the traditional enforcement path in IMC 0612, Appendix B, "Issue Screening." The inspectors determined that traditional enforcement did apply because reporting failures impact the regulatory process. In accordance with the NRC Enforcement Policy, Section 6.9(d)(2), failures to make a timely written report as required by 10 CFR 20.2206 are categorized as SL IV violations. Cross-cutting aspects are not assigned to traditional enforcement violations.

Inspection Report# : [2015001](#) (*pdf*)

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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**

Last modified : March 01, 2016