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| EVENT REPORT: | | | | | | | | | | | | | | | | |
| 1. PROBLEM TITLE : Engine makes unusual noise when loaded and also gives steady white smoke from the exhaust | | | | | | | | | | | | | | | | |
| Date Occurred: | | | 2nd Sept, 2023 | | | | Location: Adibawa Flow Station | | | | | | | | | |
| Date Reported: | | | 2nd Sept, 2023 | | | | Reported by: Field Operator | | | | | | | | | |
| **Event Type** | | Potential Threat (not yet occurred)  Reliability/integrity – Trip  *Reliability/integrity – Equipment failure*  Reliability/integrity – Others | | | | | | | | | | | |  | | |
| Equipment Tag Number: NG. ADIA1.G-8201A-DRV | | | | | | | | | | | | | | | | |
| **Sequence Of Event:**   1. Field Operator started the Genset after a prolonged outage. 2. Field Operator reported unusual performance of the G3412A. 3. Joint Maintenance team who was at site too made efforts to understand the cause malfunction- and observed excessive white smoke from exhaust and unusual noise from one of the cylinder. 4. Team manually stopped the engine & carried out preliminary checks without success. 5. IA Workshop team was invited for further checks and issue resolution. | | | | | | | | | | | | | | | | |
| Consequences: | | | |  | Risk Assessment: (People, Asset, Environment, Community) | | | | | | | | | | | |
| No deferment / outage  Oil: bbl  Gas:  Water: Nil  Flare: Nil  Other: Replacement cost xxx USD  Downtime: | | | |  | A | | | B | C | D | E | Actual: A3  Potential: A4A | | | |
| 0 |  | | |  |  |  |  |
| 1 |  | | |  |  |  |  |
| 2 |  | | |  |  |  |  |
| 3 | A | | |  |  |  |  |
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| Immediate Corrective Actions Taken: | | | | | | | | | | | | | | | | |
| # | Immediate action | | | | | | | Date | | | | | | | By | Remarks |
| 1. | Manually Shutdown the Unit. | | | | | | | 2nd Sept, 2023 | | | | | | | Field operator |  |
| 2 | Troubleshoot cause of malfunction by Asset team | | | | | | | 2nd Sept, 2023 | | | | | | | Mechanical team |  |
| 3. | Raise Notification | | | | | | | 16th Sept, 2023 | | | | | | | CRO | 11995917 |
| 4. | Carry out 5-Why Causal Investigation | | | | | | | 22nd Sept, 2023 | | | | | | | Ojiabo Chiemezie |  |
| 5. | Replace failed components & Reinstate Unit | | | | | | | 20th Oct, 2023 | | | | | | | Mtce Exec / Asset |  |

|  |  |  |  |  |  |  |
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| 2. WHAT DO WE THINK CAUSED THE PROBLEM? | | | | | | |
| **Investigation Team** | | Ojiabo Chiemezie, Emetubelem Muolee, Wlouchem Emmanuel, Omokhoa Harrison, Jiakpo Josephat, Inaibo Laiye, Okoro Fredrick, Elegbede Sakiru, Abass,K, Nkere,Rotimi Jaiola, Deresoma | | | | |
| **Problem (Primary Effect)** | | 1. Expected: Genset G3412A to run and supply power to station without unusual noise 2. **Actual**:  **Genset G3412A made unusual noise while running** 3. Impact: Power Outage to the facility as unit was manually shutdown | | | | |
|  | | **Why? / Immediate cause** | **Answer/Root Cause** | | 3. EVIDENCE? | |
| Why 1 | | **Why was there unusual noise from Genset G3412A while in service?** | Because a metallic component flickered within the combustion chamber | | Unusual noise was witnessed within the station. Evidence of pitted Piston head | |
| Why 2 | | Why did a metallic component flicker within the combustion chamber? | * 1. Because a component part of the valve failed   ~~2.2 Loose contact within the external Rotating Parts~~  ~~2.3 Failed Crankshaft Bearings~~  2.4 ~~Misaligned Rocker arm assembly~~ | | Intrusive checks made by the workshop revealed a cut on the Cylinder 9 valve.  ~~No external loose contact~~  ~~No evidence of failed crankshaft bearing~~ | |
| Why 3 | | Why did the component part of the valve fail? | 3.1 ~~Age~~  3.2 Stuck Valve  3.3 ~~Substandard valve Material~~  3.4 ~~Wrongly installed Valve~~  3.5 ~~Incomplete combustion~~  3.6 Prolonged Engine downtime | | Provide evidence of run hours. (Runhours 707034) Mtce Plan include 3M. 12M & 24M | |
| Why 4 | | Why was there stuck exhaust valve? | ~~4.1Wet fuel gas (Wet charge)~~   * 1. ~~Failed Spark Plug~~   2. ~~Engine Under-utilisation~~   3. ~~Lube oil into the combustion chamber~~   4. ~~Insufficient Air intake~~   5. ~~Excessive valve clearance opening~~   6. Engine prolonged outage | | ~~No stuck valve~~  ~~Healthy spark plug~~  ~~Smoke from exhaust did not suggest combustion chamber contamination with oil~~  Failed engine exhaust valve  Provide evidence of load at peak hours | |
| Why 5 | | Why was there engine prolonged outage? | 5.1 Unavailability of required component parts for repair | |  | |
| Why 6 | | Why was the component part unavailable | Issues with Mantrac contract to supply material | |  | |
| **Comments:** | | | | | | |
| **4. WHAT SOLUTIONS DO WE HAVE IN MIND?** | | | | | | |
| **#** | **Proposed Action** | | | **Action Party** | | **Target Date** |
| 1 | Develop a preservative mtc plan for equipment not in use | | | Deresoma/Laiye | |  |
| 3 | Verify adequate Mtc plan is in place | | | Abass k/Rotimi | |  |
| **5. HOW WILL THE PROPOSED SOLUTIONS ELIMINATE THE CAUSES OF THE PROBLEM?** | | | | | | |
| 1. This helps in lubricating moving components of the equipment, prevent seizure and make the equip ready for use | | | | | | |
| 1. Ensure that personnel responsible for operating and maintaining the engine are well-trained and know the significance of adhering to maintenance schedules. Prompt reporting of unusual noises or behaviors can lead to early intervention and prevention of more significant problems. | | | | | | |
| 1. Ensure minimum stock of critical spares for quick intervention | | | | | | |
| **Incident Owner:**  Ogbuehi Charles | | | | | | |