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| EVENT REPORT:  At about 1837hrs on 5th July, 2023, the plant tripped on OS1D | | | | | | | | | | | | | | | | |
| 1.PROBLEM TITLE | | | | | | | | | | | | | | | | |
| Title:   Plant tripped on OSD1. | | | | | | | | | | | | | | | | |
| Date Occurred: 5TH July, 2023 | | | Time: | | | Location: Soku Gas Plant | | | | | | | | | | |
| Date Reported: 5th July, 2023 | | | Time: | | | Reported by: Udo Ekemini | | | | | | | | | | |
| **Event Type** | | Potential Threat (not yet occurred)  Reliability/integrity – Trip  Reliability/integrity – Equipment failure  Reliability/integrity – Others | | | | | | | | | |  | | | | |
| Equipment Tag Number: Soku Gas plant trip on OSD1 | | | | | | | | | | | | | | | | |
| Event Description:  182ohrs: The PACO team was completing the yearly MOAP test on GTS 45PZA004A/B/C. 45PZA004A and 45PZA004C was overridden to test the functionality of 45PZA004B. Test was completed on 45PZA004BHH and reverted to normal.  1825hrs: 44PZA004C was to be tested, hence override was removed from 45PZA004C and put in 45PZAOO4B.  1827hrs: During testing of 45PZA004C and 45PZA004B went on IOP, activating the 2oo3 trip.  1827hrs: Plant tripped on OSD1 when 45PZA004C hit the 95bar HH pressure trip (2oo3)  1828hrs: Activity was suspended, and team mobilised to re-start the plant.  1829hrs: Four hours lockout on AG2/LPNAG was activated.  18:30hrs: Electrical team mobilized to restart the power turbines.  11:50hrs : Plant was restarted and normalised. | | | | | | | | | | | | | | | | |
| Consequences: | | | |  | Risk Assessment: (People, Asset, Environment, Reputation) | | | | | | | | | | | |
| No deferment / outage:  Condensate: 5,250bbl  Gas: 62.5MMSCF  Water:  Flare:  Other: 6hours  Downtime: | | | |  | | A | B | C | | D | | E | Consequence Scenario:  Actual  A2C – A deferment of 62.5MMSCF and 5kbbl due to the plant OS1 trip. | | |
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| Immediate Corrective Actions Taken: | | | | | | | | | | | | | | | | |
| # | Immediate action | | | | | | | | | Date | | | | | By | Notification / WO # |
| 1 | Restart of power turbines. | | | | | | | | | 5/07/2023 | | | | | Festus Azibator | N/A |

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| 2. WHAT DO WE THINK CAUSED THE PROBLEM? | | | | | | |
| **Investigation Team** | | Theresa Abdulmalik, Oluseye Phillips, Awe Afolabi, Tugwell Enyindah, Nelson Eduzobe, Edward Ohwojegheri, Akinjagunla Shina | | | | |
| **Problem (Primary Effect)** | | FIRE INCIDENT ON TUNU AGC 2 SEAL GAS HEATER.   1. Expected: Continuous operation of plant without trip. 2. Actual: Soku Gas plant trip on OSD1 3. Impact: Gas deferment of 62.5MMSCF and 5,250bbl of condensate. | | | | |
|  | | **Why? / Immediate cause** | **Answer/Root Cause** | | 3. EVIDENCE? | |
| Why 1 | | Why did the plant trip on OSD1? | 1. There was a 2oo3 activation of the GTS 45PZA004BHH and 45PZA004CC during the yearly MAOP function test. 2. Low Instrument air header pressure. | | 1. Display from trend. | |
| Why 2 | | Why did 2oo3 activate the GTS 45PZA004BHH and 45PZA004CC during the yearly MAOP function test. | 1. 45PZA004HH went on IOP fault during testing of 45PZA004CHH. 2. Malfunction of the transmitter A during test. | | 1. Display from trend. | |
| Why 3 | | Why did 45PZA004HH go on IOP fault during testing of 45PZA004CHH. | 1. Potential partial contact on the resistor used to override 45PZA004BHH. 2. Potential failure of resistor. | | 1. Resistor was tested okay after re-instatement. | |
| Why 4 | | Why was there partial contact on the resistor used to override 45PZA004BHH. | 1. Manual insertion of resistor introduces human error on connection points. 2. Failure of resistor. | | Resistor was tested okay after re-instatement. | |
| Why 5 | | Why did we use manual insertion of resistor for override. | 1. The system was not designed with an override switch for HH on EGGS & GTS and logic override. 2. Culture of commissioning and general PAS maintenance applied for logic override on SIS. | | 1. Maintenance override is not needed for HH EGGS and GTS trip. | |
| **Comments:** The use of manual overrider (resistor and jumpers) are not to be used for systems with 2oo3 trip function because this introduces the risk of human error during test. | | | | | | |
| **4. WHAT SOLUTIONS DO WE HAVE IN MIND?** | | | | | | |
| **#** | **Proposed Action** | | | **Action Party** | | **Target Date** |
| 1 | Operators' response to IOP should align with the actual trip on VT. | | | Theresa Abdulmalik | | 31/07/2023 |
| 2 | Cascade the standard procedure for testing voting logic for 2oo3 across Soku and other asset (SCIN) | | | Theresa Abdulmalik | | 31/07/2023 |
| 3 | Resolve the false IOP display issue on 45PZA004AHH during the shutdown. | | | Theresa Abdulmalik | | 30/10/2023 |
| **5. HOW WILL THE PROPOSED SOLUTIONS ELIMINATE THE CAUSES OF THE PROBLEM?** | | | | | | |
| **LESSONS LEARNT:**   * The culture of commissioning and general PAS maintenance should not be applied for logic override on SIS and the need to resolve legacy issues (False IOP on 45PZA004A) | | | | | | |
| **Incident Owner:**  **Akinjagunla Oluwushina. (MTC T/L)** | | | | | | |