



Astron Energy Fatigue Management Approach

May 2021

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Current Approach

- Management of Operating Hrs
- Driving Hour restrictions; shift structures (informed by AE); working hours as per the Basic Conditions of Employment; driving curfews (e.g. Botswana - no driving between specific hours of the day)
- Driver hr restrictions – contained in the Motor Vehicle Safety (MVS) Operating Standards
 - By virtue of timelines, any trip exceeding 500km requires a BVO to sleep-over.

Driver	Required Maximum Time Driving before taking a break, and break duration	Required Maximum Hours of Driving in a 24-hour period	Required Maximum Time on Duty in a 24-hour period	Required Maximum Hours of Driving Per Week
Fuel Delivery Vehicle Drivers	Required: 5.5 hours, followed by a 30 minute break Recommend: 2 hours, followed by a 10 minute break.	12	14	72, with at least one continuous break of 24 hours
All Passenger Vehicle Drivers	Required: 3 hours, followed by a 15 minute break Recommend: 2 hours, followed by a 10 minute break	10	16	40 over 4 consecutive days, followed by a break of 24 hours

- Verification of compliance.
 - o The Supervisor pre-trip briefing with Bulk Vehicle Operator (BVO) - (including when a sleep-over)
 - ✓ Leverage the Prior Sleep Wake Model
 - o Monitoring and enforcement of rest-breaks and extended breaks
 - ✓ Leverage On-Board Computers & Cameras (OBCC's)
- Verified during Assurance Activities:
 - Road Transport Safety (RTS) Assessment
 - o Supervisors have been trained on Prior Sleep Wake Model and are using it effectively.
 - Operations: Formal assurance activities

Electronic Equipment

- Operations: Leverage electronic/badging system
- Fleet Operations:
 - All Bulk Trucks fitted with OBCC's
 - Expand to use: **Detect Distraction & Drowsiness**
 - Approx. 10% of haulers' equipment can be upgraded
- Review the application of Fatigue Management
 - o Leverage 3rd Party SME as part of Fleet Operation Assessment:
 - o Review current practices and equipment used by Astron Energy and Haulers;
 - o Evaluate the available systems:
 - o System being used by other companies (e.g.. DSS Fleet); and other available technology to compliment the current OBCC's
 - o Identify any enhancements – including the need for additional vehicle hardware

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Project Plan

- Further enhance the pro-active approach
- 3rd Party Engagements
 - Leverage the Lessons Learnt
 - Multiple interactions with various entities/organizations (including mining)
- Options
 - Different Fatigue Management solutions across the various entities
 - Fleet: Some groups are leveraging On-board cameras;
 - Operations: Manage fatigue risk for all staff entering the facility. (e.g. Prism)
 - Various “Pilots” underway – plan for Astron Energy to leverage these
- AE Project Approach
 - Plan to manage as a project
 - Scope: Fleet and Operations (Terminals and Refinery)
 - External Project Manager identified - Plan to appoint by mid-May.
 - Next steps:
 - Scoping document
 - Project Team identified
 - Leverage 3rd Party SME as part of the Fleet Assessment: