

THE KUESEL GROUP	<i>Fatigue Management</i>	Procedure No.: SP-05 Revision No.: Date: Nov. 2018 Page: 29 of 558
---------------------------------	--	--

SP 05 Fatigue Management

1.0 PURPOSE:

- 1.1 This purpose of this policy is to increase awareness and understanding of the issues of fatigue, manage the risk factors and hazards, and prevent related injury and illness.
- 1.2 This policy should serve as a guideline for setting work schedules. Staffing levels should be adequate to manage workloads and minimize the potential for employees to work in excess of 14 consecutive days or 16 hours in a single day.

1.0 REFERENCE DOCUMENTS

- 1.1 American Petroleum Institute (API) RP-755

2.0 RESPONSIBILITIES:

- 2.1 **Project Management/Site Management** shall be responsible for ensuring uniform implementation and compliance with this program by site employees and subcontractors.
 - 2.2 **Safety Representative** shall be responsible for:
 - 2.2.1 Providing support and guidance as needed to ensure that site personnel are instructed in and trained, initially and annually, to the requirements of this program and to applicable site specific requirements.
 - 2.2.2 Maintaining appropriate documentation as evidence of the training program and comprehension level of the personnel.
 - 2.2.3 Responsible for ensuring employee schedules are developed in accordance with this guideline.
 - 2.2.4 Periodically review and evaluate work tasks and workplace conditions to ensure proper fatigue management.
 - 2.3 **Supervisor Responsibilities**
 - 2.3.1 Ensuring that personnel under their direction attend and receive appropriate training and that they maintain compliance with this program.
 - 2.3.2 Ensuring that only trained employees assume active roles and perform related work(s) in accordance with this program.
 - 2.3.3 Recognition of possible fatigue related errors and the associated mitigation
 - 2.3.4 Investigate Employee reports of fatigue and take appropriate actions.
-

THE KUESEL GROUP	<i>Fatigue Management</i>	Procedure No.: SP-05 Revision No.: Date: Nov. 2018 Page: 30 of 558
---------------------------------	--	--

2.4 Employees

- 2.4.1 Shall be responsible for ensuring they understand and comprehend this program and maintain full compliance with this program and its contents.
- 2.4.2 Must report fatigue and lack of mental acuity to supervision.
- 2.4.3 Must not chronically use over-the-counter or prescription drugs to increase mental alertness.
- 2.4.4 Are discouraged from taking any substance known to increase fatigue.

4.0 DEFINITIONS:

- 4.1 **Call-out** - Summoning an employee to the work site to perform work that he/she was not scheduled to perform.
- 4.2 **Extended shifts** - Time an employee is assigned to work that extends outside their regularly scheduled shift hours and into other shifts.
- 4.3 **Fatigue** - Reduced mental and physical functioning caused by sleep deprivation and/or being awake during normal sleep hours. This may result from extended work hours, insufficient opportunities for sleep, failure to use available sleep opportunities, or the effects of sleep disorders, medical conditions, or pharmaceuticals which reduce sleep or increase sleepiness.
- 4.4 **Holdovers** - A periodic, occasional extended shift, where employees are at work beyond their regular shift to participate in training, safety meetings and the like. This does not include time needed for normal shift handoff.
- 4.5 **Shift work** - An organization of work where workers succeed each other at the same workplace while performing similar operations at different times of the day thus allowing longer hours of operation than feasible for a single worker.
- 4.6 **Work sets** - Consecutive shifts with a minimum of 36 hours off before starting another work set.

5.0 WORK SCHEDULES:

- 5.1 This section will set work hour limitations and will control job rotation schedules to control fatigue, allow for sufficient sleep, and increase mental fitness in an effort to control employee turnover and absenteeism. In general, work shifts will be limited to 16 hours. Work shifts may be extended beyond 16 hours, not to exceed 18 hours, provided the extension request is approved by Site Supervision.
 - 5.2 **Work Sets and Time Off**
 - 5.2.1 Work Sets and Time Off schedules should be in accordance with Appendix A.
-

THE KUESEL GROUP	<i>Fatigue Management</i>	Procedure No.: SP-05 Revision No.: Date: Nov. 2018 Page: 31 of 558
---------------------------------	---	--

5.2.2 The work set does not reset until the employee has 36 consecutive hours off.

5.3 Call Outs

5.3.1 The first call out of a work set in which an employee works five hours or less and has at least eight consecutive hours off will not be counted as a shift toward the work set.

5.3.2 Initial call outs that do not meet the above criteria and any subsequent call outs during a work set, regardless of time off, will be counted as a shift toward the work set.

5.4 Breaks

5.4.1 To control fatigue and increase mental fitness, employees will be given breaks at intervals appropriate for their work shift.

5.4.2 Break areas should have chairs or other acceptable means for the employees to sit down.

6.0 WORK TASKS AND WORKPLACE CONDITIONS:

6.1 Work tasks will be analyzed and evaluated periodically to identify the potential for fatigue. Where applicable, work tasks may be evaluated as part of the task's job safety analysis (JSA).

6.2 Work tasks and workplace conditions such as those listed below can aggravate fatigue.

6.2.1 high noise areas both inside and outside.

6.2.2 extreme weather, hot or cold

6.2.3 poor ventilation

6.2.4 standing for extended periods

6.2.5 being away from home for long periods

6.2.6 wearing personal protective equipment (ex. respirators, heavy clothing, etc.)

6.3 Appropriate workplace controls shall be used as appropriate to mitigate potential workplace fatigue and improve workplace conditions:

6.3.1 anti fatigue mats

6.3.2 personal protective equipment (ex. hearing protection, respirators, etc.)

6.3.3 lift assist devices

6.3.4 cool vests

THE KUESEL GROUP	<i>Fatigue Management</i>	Procedure No.: SP-05 Revision No.: Date: Nov. 2018 Page: 32 of 558
---------------------------------	----------------------------------	--

6.3.5 proper lighting, ventilation, and control of temperature

7.0 TRAINING:

7.1 All employees will be trained initially on this procedure. Training to include:

7.1.1 The requirements of this procedure

7.1.2 How to recognize and control fatigue through appropriate work and personal habits

7.1.3 How to report fatigue to supervision

7.2 All personnel will receive annual training on this procedure. The training may be conducted as part of toolbox talks or safety meetings.

8.0 REVISION REGISTER

Date	Description of Change	Page No.	Initials

THE KUESEL GROUP	<i>Fatigue Management – Appendix A: Fatigue Risk Management System</i>	Procedure No.: SP-05 Revision No.: Date: Nov. 2018 Page: 33 of 558
---------------------------------	---	--

Work Schedule/Situation	12-hour shift	10-hour shift	8-hour shift
Maximum consecutive shifts in a work set	14 shifts	16 shifts	19 shifts
Minimum time off after a work set	36 hours	36 hours	36 hours
Holdovers shall not exceed	2 hours	2 hours	4 hours
Extended shift: Maximum for an unscheduled shift	18 hours	16 hours	16 hours
Extended shift: Time off after shift: • 10 to 16 hour shift • 12 to 16 hour shift • 14 to 16 hour shift • >16 to 18 hour shift	N/A N/A 8 hours 10 hours	N/A 8 hours 8 hours N/A	8 hours N/A N/A N/A
Maximum number of extended shifts/work set	1 (>14-hours)	<u>14-hour shift: 1</u> <u>12-hour shift: 2</u> Note: for 3 or more 12-hour shifts, follow the 12-hour shift schedule	<u>>12-hour shift: 2</u> Note: Extended shifts must be non-consecutive; For 3 or more 12-hour shifts, follow the 12-hour shift schedule

The table above is based on API RP-755 Fatigue Risk Management Systems for Personnel in the Refining and Petrochemical Industries.