

ELECTRICAL SAFETY AND RELIABILITY AUDIT CHECK LIST
FOR
MOTORS

AREA/MOTOR LOCATION I.D. #: MP 156 E
AREA/MOTOR EQUIPMENT I.D. #: _____
VOLTAGE: 2400
HORSEPOWER: 4.50

Note: Review large or critical service motors individually.
Generally, motors equal to or less than 100 HP in an
identified process area can be considered as a group.

MOTOR ENCLOSURE/MOUNTING Yes No N/A

- | MOTOR ENCLOSURE/MOUNTING | Yes | No | N/A |
|--|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Are the motors clean and free from corrosion? | ☒ | ☐ | ☐ |
| 2. Is the manufacturer nameplate in place and legible? | ☒ | ☐ | ☐ |
| 3. Are the motors properly labeled with the Dow location and equipment I.D.? | ☐ | ☒ | ☒ |
| 4. Are the motors suitable for the hazardous area classification? | ☒ | ☐ | ☐ |
| 5. Are all motors suitable for the area classification? | ☒ | ☐ | ☐ |
| 6. Are the motors on Dow's approved equipment list? | ☒ | ☐ | ☐ |
| 7. Is there predictive/preventive maintenance performed on the motors? | ☒ | ☐ | ☐ |
| 8. Are the motors bolted to foundation? | ☒ | ☐ | ☐ |
| 9. Are space heaters installed on the critical motors? | ☒ | ☐ | ☐ |
| 10. Do the vertical motors have rain shields? | ☒ | ☐ | ☐ |

Motor Enclosure/Mounting Index Score: 4

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MOTOR OPERATION/PROTECTION

Yes No N/A

1. Is there appropriate temperature monitoring/alarm/trip of the critical service motors? (i.e. bearings, windings) ☒ ☐ ☐
2. Are motors free of any signs of water leaks? ☒ ☐ ☐
3. Are vibration levels below the required minimum? (0.1 ins/sec) ☒ ☐ ☐
4. Is there appropriate vibration monitoring/alarm/trip of the critical service motors? (i.e. bearings, windings) ☒ ☐ ☐
5. Is there a vibration monitoring program for the motors? (i.e. continuous or routine checks) ☒ ☐ ☐
6. Are the motor noise levels acceptable? ☒ ☐ ☐
7. Is there proper motor overload protection for the critical service motors? ☒ ☐ ☐

Motor Operation/Protection Index Score: 3

LUBRICATION

Yes No N/A

1. Are the motors free from apparent oil leakage? ☒ ☐ ☐
2. Is there a lubrication program for the motors? ☒ ☐ ☐
3. Is proper type of lubricant being used? (i.e. Roller v.s. Ball bearings) ☒ ☐ ☐

Lubrication Index Score: 3

POWER CONNECTIONS, CONDUIT, AND LOCAL SWITCH

Yes No N/A

1. Do all motors have side or bottom conduit entry? ☒ ☐ ☐
2. Are there any motors with top conduit entry? ☐ ☐ ☒

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|--|-------------------------------------|-------------------------------------|----------------------------|
| 3. Is flex conduit in good condition? | ☒ | ☐ | ☐ |
| 4. Does flex conduit slope upward to junction box? | ☒ | ☐ | ☐ |
| 5. Is there sufficient low point drains on the conduit? | ☒ | ☐ | ☐ |
| 6. If motors in hazardous area, are proper conduit seals installed? | ☒ | ☐ | ☐ |
| 7. Are all local control stations properly labelled? | ☒ | ☐ | ☐ |
| 8. Are all motor safety switches properly labelled and <u>lockable</u> ? | ☐ | ☒ | ☐ * |
| 9. Are all control station free of corrosion? | ☒ | ☐ | ☐ |

Power Connections, Conduit, & Local Switch Index Score: 4

GROUNDING

Yes No N/A

- | | | | |
|--|-------------------------------------|--------------------------|-------------------------------------|
| 1. Are the ground conductors attached properly to the frame of the motor? (NOT End Bell Cover, Fan Cover, or Motor Junction Box Cover Bolts) | ☒ | ☐ | ☐ |
| 2. Are there bonding jumpers across the flex conduits? (1.5" and larger) | ☐ | ☐ | ☒ |

Grounding Index Score: 3

OTHER

Yes No N/A

- | | | | |
|---|-------------------------------------|--------------------------|-------------------------------------|
| 1. Are brushes being checked routinely on the DC motors? | ☐ | ☐ | ☒ |
| 2. Is there a list of the motors in critical service? | ☒ | ☐ | ☐ |
| 3. Are the DC motors in classified areas properly purged? | ☐ | ☐ | ☒ |

Other Index Score: 3

Motors Average Index Score: 4

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