



## TURBINE GENERATOR MAINTENANCE OBSERVATION / AUDIT PROGRAM

**PURPOSE:** This program is designed to monitor the effectiveness of TGM's safety program in order to reduce and eliminate safety hazards at outage sites and maintain a safe, healthy work environment for all TGM employees. This is a proactive approach to injury prevention that focuses on at-risk behaviors that tend to lead to injuries. We audit outage sites to ensure established policies and procedures are understood and followed, and enforce compliance with training and goal-setting.

**ADMINISTRATIVE DUTIES:** The Director of Safety is responsible for developing and maintaining the written observation / audit based program.

**PERFORMANCE GOALS:** In our proactive approach toward injury and accident prevention, we have developed corporate level, safety related goals and objectives. The Director of Safety will conduct on-site visits of as many major and minor outages as physically possible. This will entail conducting "no notice" inspections and documenting each visit with a report of discrepancies if found. The Director of Safety will discuss and suggest ways of repairing, improving, or fixing hazard areas, and will hold employees accountable for controlling safety during their outage. This program has and continues to reduce our TIRR (Total Incident Recordable Rate).

**MOTIVATIONS TOWARD SAFETY:** Provide a safe and secure working environment for all of our employees. Provide for a safety bonus program as incentive for employees who create positive safety practices and eliminate hazards in their working environment.

**TRAINING:** The Director of Safety, along with Technical Directors, Foreman, and Project Coordinators, conduct initial "New Hire Orientations" and document training. Training in various safety areas is conducted on an as-needed basis. OSHA 10 hour is provided to all employees when possible, and all Foreman and Project Coordinators are trained in Basic First aid, CPR, and AED.



# SAMPLE SAFETY AUDIT INSPECTION TRIP REPORT

On (date), I conducted a field safety audit for Turbine Generator Maintenance. The outages started on (date) and had a planned end date of (date). The audit was conducted from (date) to (date). As I arrived, I entered plant site and met with the Technical Director and his project team of: \_\_\_\_\_.

These were one shift outages, so no nightshift was scheduled. I started my initial audit on (date). I arrived at the plant at approximately 2:00 p.m., I inspected the daily “Toolbox Talks” documentation for content and accountability. All Toolbox Talk paperwork was in order. Employee pre-outage brief was conducted and signed by each mechanic (included in this report). This brief is important because it lists in detail TGM Safety Regulations prior to job start.

I did a safety check in the office trailer; the trailer is designed as a work center where personnel have access to MSDS information and details in case of emergency or need of first aid. The office trailer was in kept neat and orderly with no clutter. Parts were brought in but were inventoried and put away for later use. The fire extinguisher was hung and unobstructed with a current inspection and was in serviceable condition. I was encouraged to see that these inspections are current and up to date since being neglected in the past. Tools were staged on the turbine deck upstairs close to the turbines being worked. This was effective because it served a couple of purposes: one, it eliminated clutter and, two, it saved time wasted due to mechanics having to travel between turbine deck and tool trailer; it also was used for mechanic break area. I observed several large areas or open holes on both sides of the turbine and in the center of the floor that were cordoned off with a hard barrier. This eliminated the possibility of someone accidentally falling into the open hole.





All hoses and extension cords were strung overhead or out of the way to avoid a tripping hazard. Those that were not able to be placed out of the way were conspicuously marked with yellow caution tape and signs to indicate a hazard. The remainder of the day was allotted to observation.

The next morning I attended the morning “toolbox meeting” to be a part of the beginning shift safety meeting with the dayshift foreman, (name). (Name) conducted his meeting and covered some safety topics including the main focus of the work being performed on that shift. I explained to (name) he needs to be more aggressive in his morning briefings and take charge to get mechanics to participate and get involved, this is important due to the fact that this is the most important part of the discussion. He needs to realize that he is responsible for the safety of these individuals during that shift. (Name) did state that he has several safety briefs throughout the day but they are not documented. I spent 15 to 20 minutes briefing OSHA injuries and our current OSHA recordable rates and how it affected them and TGM on awarding future jobs.

I expressed TGM safety concerns on incidents from past jobs that were recordable and asked that they keep an eye on one another to avoid future incidents. I asked if everyone was aware of where the MSDS sheets were kept in case of an emergency; all knew where the book was located. The rest of the day was devoted to observation.

I was once again a part of the morning toolbox meeting conducted by the dayshift foreman. For the most part, the meeting was better but I have faith that with further experience it will improve greatly. I fully believe that people take more out of briefings the more interesting and meaningful the speaker gets his / her point across. Tool cabinets were not removed from the trailer since they were accessible on the turbine deck. The large boxes were arranged on the deck and positioned for easy access and out of the walkways.

The Vidmar tool cabinets were in serviceable condition. One large cabinet with the high pressure sprayer and chain hoists was not locked; although the doors were closed, the lock hasp was broken and the box could have been easily opened. (Name) said that he would take care of it asap. I did not observe any tooling lying around that was not being used, and all tools were put away properly after use. I also saw one 6 ton chain fall hoist with a broken safety latch; (name) stated that he would take care of that also.



Of the four 1" air hoses connected to the air header, all were connected and engaged and pinned. Most electrical cords and small air hoses were strung up overhead off the floor out of the way. The hoses and electrical cords that were across the floor were conspicuously marked with yellow caution tape and signs to indicate a tripping hazard. GFI circuit interrupters were plugged into electrical outlets which, in turn, were connected to electric tools to avoid shock and overload hazard. Turbine parts were bagged, tagged, and legibly identified with parts removed from the turbine.





One concern: I found the oxygen and acetylene bottles stored inside the tool trailer overnight with the gauges and burning apparatus still attached to the bottles on the cart. There are 3 safety issues combined: 1) no compressed bottles are to be stored inside of an enclosed building, 2) when cylinders are not in use they must have the valve caps secured and 3) bottles must be separated by at least 20ft and properly secured to avoid tipping over, rupture, or chance of explosion. Trash receptacles were placed in several areas and did not seem to be an issue. There was no visible evidence of hazards due to oil residue on the floor.



Upon observation of the turbine deck area, I noticed that all mechanics and the foreman were wearing hardhats, safety glasses with side shields, and steel toe shoes. There was another machine on the deck that was operating at the time at the noise level beyond the OSHA standard 85db rate. I observed that all mechanics were wearing their hearing protection as well as the foreman.



I was especially impressed with the area where the bench grinder was being utilized; the area was set aside out of the way, cordoned off with yellow caution tape with a tag stating *what* the caution was, *and who* the company it affected is, and *name* of the person to contact that erected the area. The grinder had all of its protective shields installed; they were clean and serviceable. The guards were in place and set to the 1/8" standard setting.

Overall, the team was very safety conscious; I felt that they had safety handled. (Names) work well together to form a cohesive project team. Keep up the great work.

James J. Fitzmartin  
Director of Support / Safety Coordinator / TGM



# SAFETY REGULATIONS

**BRIEF AT BEGINNING OF EACH JOB  
SIGN AND RETURN TO YOUR PC**

JOB# \_\_\_\_\_

Turbine generator Maintenance is committed to safety and has taken steps to protect you from injury on the job. **Ultimately, responsibility for safety lies with you**, your help is vital for your own protections as well as for the safety of your co-workers. **Please observe the following safety regulations at all times.**

1. Hardhats, steel toed safety shoes and OSHA approved safety glasses are to be worn at all times.
2. No alcohol or drugs allowed on any jobsite. TGM is a "Zero Tolerance Employer".
3. No firearms will be allowed on company property or jobsites.
4. Immediately report all accidents, injuries and /or incidents to your supervisor.
5. A drug test will be required after all accidents or injuries AND / OR may be requested at any time during the outage.
6. Wearing of seatbelts is a **MUST** in all company leased vehicles.
7. Forklift operators **MUST** have a valid forklift license in your possession.
8. Wear both a face shield and safety glasses at all times while grinding. Be sure all guards are in place on all grinders. Work rests on bench grinder shall be adjusted to a maximum 1/8" clearance from the wheel to prevent work from getting jammed.
9. Lift with your legs, not your back. Get assistance or use the overhead crane to move heavy loads.
10. Do not remove or by-pass any guards or protective devices on any machinery.
11. **Do not** use compressed air to clean yourself or your clothing.
12. Keep tops on oxygen and acetylene bottles, separate by 20' and secure when not in use.
13. Inspect all rigging prior to use, observe proper rigging procedures when lifting.
14. Participate in pre-lift meetings prior to critical lifts.
15. Safety clips **Must** be installed on all air line connections.
16. Fire extinguishers will be on hand when cutting, grinding welding, or bolt heating work. Fire watches will remain in place for 30 minutes after the last spark is produced.
17. Always do hot work with a proper hot work permit.
18. Good housekeeping practices will be observed at all times in the office and tool trailers, and on the turbine deck.  
**Maintain a clutter free work area.**
19. When using a parts washer, wear proper rubber gloves and both safety glasses and a face shield.
20. Advise your supervisors (Foreman, TD's and PC's) of any potential hazardous conditions.
21. All hazards will be marked by caution tape, with a tag describing the hazard attached including the company (TGM) and supervisors name
22. Watch out for your fellow outage team members, if you see a safety hazard, immediately stop the work and correct the hazard.
23. Follow all other verbal or written safety procedures.
24. Make sure all equipment is "locked out" and de-energized prior to beginning work.
25. Ensure your lock is tagged with your name, and only you can remove it. Keep *your* key in *your* possession.
26. Suggestions on how to improve safety are greatly appreciated. Let's all work together to make a safe working environment!
27. TGM carries 2 cut-off discs in our tools, use the proper wheel designed for the RPMs of the angle grinders.
28. When in close proximity to someone using a grinder, you **MUST** wear a face shield also to prevent an eye injury.
29. Know where the MSDS sheets are maintained and located. If you don't know ask!
30. I am able to perform all task functions of work and to the best of my knowledge I am not limited by an injury in any way.
31. A safety incentive of \$0.25 cents for every hour worked on this job applies, to keep it everyone will need to **stay safe**. Don't hesitate to help a fellow employee be safe during this outage. **Remember, their safety is your money.**

\_\_\_\_\_  
Sign and Print Legibly

\_\_\_\_\_  
Date

\_\_\_\_\_  
Sign and Print Supervisor Legibly

\_\_\_\_\_  
Date

