

Key Elements of a Safety Program for Broadcasters

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Safety programs have some key elements regardless of the physical or chemical agent that they are designed to protect against. These key elements are the basis for eleven program elements:

1. **Written Documentation of the Program.** If it isn't written, you **do not** have a safety program.
2. **Management Support.** A safety program must have the full backing of management if it is going to work. There must be a commitment to allocate the appropriate resources.
3. **Education and Communication.** The safety program must be communicated to your employees and they must understand the work rules, procedures, and policies that they are expected to follow. Education is an ongoing requirement. Initial training is required when the safety program is first put in place. Periodic (annual) refresher training is also needed. A procedure must be in place to handle new employees (and waiting eleven months until the next annual refresher course is not adequate).
4. **Enforcement of the Safety Program.** A safety program filed away in a drawer is not a safety program. An inspector from an organization such as OSHA will normally start by asking employees what they know about the safety program and the procedures that they follow. If they do not know or have been allowed to ignore the policies, it is almost worse than not having a safety program.
5. **Identification of Hazard Areas.** You must have a reasonable idea where the field strengths may exceed the Maximum Permissible Exposure (MPE) levels for both Occupational/Controlled areas and for General Population/Uncontrolled areas. Periodic surveillance by a competent person who can effectively assess hazard levels is needed. Any time conditions change - for example, new transmission equipment is installed and/or there is new construction that may alter propagation patterns - a new survey is needed. Otherwise, an annual check should be adequate. It is important to survey transmitter cabinets and transmission line systems. Maintenance procedures around transmitter cabinets and transmission lines should be followed by a quick check for leaks (OET-65 is useless for predicting leaks).
6. **Marking and Control of Hazard Areas.** Once potential hazard areas have been identified, i.e., by making some measurements, they have to be marked. Signs and perhaps physical barriers such as chains and fences are needed.

7. **Controls and/or Work Practices.** Establish work practices. It is highly recommended that you establish boundaries that do not depend on time averaging. It is risky to depend on human behavior, i.e., allowing an individual to work in a certain area for three minutes because the field levels are 200% of the MPE. Multiple-site operators should consider adding site-specific work rules to the corporate-level safety program.
8. **Employee Involvement in the Structure and Operation of the Safety Program.** Adherence to the safety program starts with the employees. First, they must believe in the need for a safety program. Then, they must understand the rules and procedures of your safety program. Get them involved.
9. **Medical Program.** No, you do not need to send employees for routine physicals. There are two things you do need. First, all employees that are expected to work in areas with potential exposure to RF fields above a modest level, i.e., the General Population/Uncontrolled MPE levels, should be screened to identify those with medical implants that contain electronic circuitry. Pacemakers are only one of many implants routinely used today. Unfortunately, there is a substantial risk that devices will malfunction at field strengths far below the FCC MPE limits. Such people need to know that their potential exposure risks are greater, not from a purely biological response but for electromagnetic compatibility (EMC) which may result in erratic functioning of their implant. Second, the safety program must have provisions to handle overexposure incidents, whether real, or ultimately found to be unsubstantiated. Severe situations will require a physical exam. All incidents should be documented using a standard form that helps you quantify and record the level of the exposure. Often, a reported overexposure incident is found to be fully within the FCC regulations once the elements of whole body averaging and time averaging are considered.
10. **Scheduled Reviews of the Safety Program.** The safety program should be reviewed annually so that deficiencies can be identified and resolved. In some cases, it may even be possible to change procedures to improve operations without compromising employee safety. A review of all incident report forms (see #9) is crucial.
11. **Assignment of Responsibility.** Someone in your organization must be clearly identified as the RF safety person. This person will normally have other duties. This individual must have the necessary authority and resources to implement and enforce all aspects of the safety program (see #2).