Chapter 8 Safety

[2 exam Questions – 2 groups] G0

Radio Frequency Radiation Exposure Hazard

RF energy can **heat human body tissue**
RF **MAXIMUM PERMISSIBLE EXPOSURE (MPE)** is determined by **power density, freq & duty cycle**
Frequency, RF Power, Distance & Radiation Pattern of the antenna affect the RF exposure
You must **take action to prevent human exposure to the excessive RF fields**
A **lower TX duty cycle permits** greater short-term RF exposure levels
The total RF exposure averaged over a certain time is **"TIME AVERAGING"**
Perform a routine RF exposure evaluation specified in part 97.13
Re-evaluating the station whenever equipment is changed to ensure RF safety
A **calibrated field-strength meter** can be used to accurately measure an RF field
Installed ground-mounted antenna **so no one can be exposed to RF** in excess of MPE
MPE limits are not exceeded with indoor transmitting antenna
Turn off the transmitter and disconnect the feed line when working on antenna
FCC OET Bul 65, computer model or field strength meter determine complies with RF

Electrical Hazards

Hot wires in a four-conductor line cord **should be fused** from a 240-VAC single-phase source
Ground station equipment to ensure **hazardous voltages cannot appear on the chassis**
Ground Fault Circuit Interrupter (GFCI) disconnects when current is flowing directly to ground
#14 AWG Wire >> **15 amperes** of continuous current
#12 AWG Wire >> **20 amperes** of continuous current

Disconnect the incoming utility power feed when powering your house from an emergency generator
An emergency generator should be **located in a well ventilated area**
Danger of carbon monoxide poisoning using a placing a gasoline-fueled generator inside

When being **charged a lead acid** storage battery gives off **explosive hydrogen gas**
TX power supply interlock ensures that **dangerous voltages are removed if the cabinet is opened**
Lead (lead-tin solder) can **contaminate food if hands are not washed carefully after handling**
Electrical safety inside the ham shack is covered by the **National Electrical Code**

Antenna Tower Safety

Always attach the belt safety hook to the belt **D-ring with the hook opening away from the tower**
Make sure all **circuits that supply power to the tower are locked out and tagged** prior to climb
A **soldered joint** will likely be **destroyed by the heat of a lightning strike** (do not solder ground rods)
Good engineering practice requires **lightning protection grounds be bonded together**