problems ofunfair discrimination in employment by being very specificaboutany restrictions.
Although the preceding protocols have been designed for the workplace, they may also have ap-plication in clinical settings forpatientswith metallic implants who are to be exposed to RFR.

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Appendix

The assessment of the heating of an implant can be illustratedby the following case of a 32-year-old male radio technician who hadundergonecardiacsurgery for an ectopic focus and still had wire sutures secur-ing his sternum.

The chest radiograh and clinicalnotes revealed I-mm stainless steel wires forming loops and near- vertical twists of wire some 2 mm indiameter(figure A-I). Thesestructureswere classed asboth rods (the wire twists) and rings for purposes of RFRinteractioncal-culation.

The subject waspredominantlyexposedto frequen-cies between 6 and 22 MHz at low levels(:5 2 mWI crrr'), but the possibility existed of exposure to the allowable limit of 25 mWI crrr' for up to 8 h with pro-vision for a maximumshort-term(6 min) exposure limit of up to 100 mWI crrr'. (See figure 1 in the in-troduction.)In thefuturehe may be required to work at frequenciesabove 30 MHz, forwhich the exposure

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limit is 1 mW/ crrr' for up to 8 h with provision for
a maximumshort-termexposure limit of 5 mWI cnr', The interactionbetween the incident fields and the implants was assessed with the use of two methods, and the subsequent tissue temperatures werecalculated. With the first methodthe implant was treatedas a resonant structure. A perturbational analysis involving some simplifying assumptionswas used todetermine the ability of the sutures to heat thesurroundingtis-sue. Because of to the high frequency at which the suturesresonate,around1650 MHz, aplanarmodel of the localgeometry,including thesternumand sur-roundingtissue, was used in estimating the fields in tissue due to an external electromagneticwave with-out theimplantbeingpresent.Two thin wireantenna programs(1, 2) were then used to investigate the re - sulting near fieldssurroundingeachsuture.The tech-nique of these programs is to segment the physical wire structureinto small filamentary element sand apply the method of moments (3).