1. Call to Order
   - The meeting was called to order at 10:02 ET by R. Tell. D. Haes recorded the minutes.

2. Welcome and Introduction
   - See Appendix A for presentation by the Chair. Attendees were asked to “sign-in” using the chat feature of the meeting platform. See Appendix B for attendees and Appendix C for a copy of the chat log. There was a high of 31 attendees at the meeting.

3. IEEE Patent and Copyright requirements
   - IEEE SA’s copyright policy is described in Clause 7 of the IEEE SA Standards Board Bylaws and Clause 6.1 of the IEEE SA Standards Board Operations Manual; Any material submitted during standards development, whether verbal, recorded, or in written form, is a Contribution and shall comply with the IEEE SA Copyright Policy.
   - The foregoing [copyright policy] information was provided and the copyright slides were shown (or provided beforehand).

4. Approval of Agenda: The DRAFT AGENDA circulated via e-mail by R. Tell to the members prior to the meeting was reviewed and approved (Matt Butcher/P. Zollman) (See slide pack, Appendix A).
5. Approval of the Minutes from the January 12, 2022, online meeting
   - The Minutes from the January 12, 2022, online meeting, previously made available via e-mail, were reviewed, and approved without changes. (D. Maxson/R. Curtis). (APPROVED MINUTES are posted on the ICES / SC2 website).

6. Meeting topics: See Appendix A for presentation by the Chair. Any ACTION ITEMS, specific comments, and/or questions were recorded under each of the associated outlined topics corresponding to the slides.
   - Current status of draft revision of C95.7-2014.
     i. R. Tell discussed the current status of the revision, almost ready for a recirculation ballot within TC95.
     ii. C-K. Chou suggested reaching out to P. Roder from IEEE to begin the process of creating a balloting committee.
     iii. ACTION ITEM: Chair to contact P. Roder from IEEE to begin the process of creating a balloting committee.
   - Discussion of revision draft by meeting attendees
     i. D. Haes began the discussion with a comparison of climbing the 500+ stairs to visit the Arecibo Radio-Astronomy dish in Puerto Rico, to the arduous task of the EWG; it’s only through hard work and dedication do you get to see the end result. He also informed the group that the first version presented for SC2 committee vote in 2005 had 142 comments; the second version presented in 2012 had 13 comments; while the 2020 version had almost 1300 comments to resolve.
     ii. R. Tell asked the group “why should someone use C95.7?”
        1. C-K. Chou offered that it is the companion document to C95.1.
        2. G. Lapin stated it is useful for the 3,000,000 amateur radio users (worldwide) who would likely never read C95.1.
     iii. K. Fisher resounded the herculean efforts of the SC2 Chair stated by D. Haes, and compared the quantitative content of C95.1 and the qualitative content in C95.7
     iv. R. Curtis presented slides discussing the “regulatory” importance of making the conversion of C95.7 from IEEE Recommended Practice to IEEE Standard. (See slides, Appendix D). He also offered that is the reason WHY there are so many comments in the review of the document.
     v. R. Tell mentioned the extraordinary efforts of P. Zollman in making the document “easier to use”, and suggested the next revision should be compared against the EU Directives.
7. Technical presentation (See slides, Appendix E).
   - Radio Frequency (RF) Safety at SCE (Southern California Edison) and Electric & Magnetic Fields (EMF) by Philip Hung, Senior Advisor at Southern California Edison, Edison Safety / EMF and Energy Group.

8. Request for suggestions on topics for future technical presentations
   - There were NO suggestions offered.

9. New business
   - Conduct an evaluation of implementing C95.7 for the EU Directive.
   - Hold several SC2 "Workshops" where we involve the FCC and discuss various aspects of controls in SPs such as Lockout/tagout and positive access control, etc.
   - Develop a Guide for applying the new C95.7.

10. Time and place of next meeting
    - C-K. Chou mentioned the ADCOM is considering holding the next ICES meeting in Chandler, AZ, January 17-19, 2023. This would be a “hybrid” event, allowing both on-site and online participation. Fees would need to be collected, however, even for on-line participation.

11. Adjourn
    - The meeting was adjourned at 12:16 ET (unanimous).

**ATTACHED APPENDICES**
- APPENDIX A: R. Tell SC2 Meeting presentation 06/02/2022.
- APPENDIX B: Attendees SC2 Meeting online via WebEx 06/02/2022.
- APPENDIX C: Chat Log, SC2 Meeting 06/02/2022.
- APPENDIX D: R. Curtis slides 06/02/2022.
- APPENDIX E: P. Wong slides 06/02/2022.
Welcome to the IEEE TC95-SC2 Meeting
2 June 2022
Subcommittee on Terminology, Units of Measurements, and Hazard Communications
A subcommittee within the International Committee on Electromagnetic Safety
Under the auspices of the IEEE Standards Association

What is ICES SC2?
SC2 has the name
Subcommittee 2 on Terminology, Units of Measurement, and Hazard Communications
Consists of approximately 73 "signed up" members but many "lurkers"
SC2 is the development group for
• IEEE Std C95.7-2014 IEEE Recommended Practice for Radio Frequency Safety Programs, 3 kHz to 300 GHz [currently being revised]

Participants have a duty to inform the IEEE of holders of essential patent claims if they or their affiliations hold such claims. Check the web link at: https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/patents.pdf for more details. If anyone in this meeting is personally aware of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please speak to the committee chair today.

Participants also have a duty to comply with the IEEE policy on copyright for published documents. Details at https://standards.ieee.org/ipr/copyright-materials.html

IEEE SC2 online meeting (6-2-2022)
An IEEE SC2 Editorial Working Group (EWG) was formed 2019 consisting of R Tell, D Maxson, D Haes, B Curtis, B Johnson, K Fisher, R Mathur and P Zollman.

6. Meeting Topics

- Revision of C95.7-2014
  - Draft distributed to SC2 for review and voting in December 2020
  - Total comments received: 770 (537 editorial and 233 technical)
  - Document APPROVED for progressing to TC95 (81% approve)
  - Comments addressed during 2021 with revised draft completed March 2022

Status of C95.7-2014 Revision: SC2 APPROVED

- Revised draft balloted by TC95 from Mar 15 to Apr 16, 2022
- Total of another 525 comments received (total 1,295)
- Document APPROVED for progressing to IEEE-SA (95.4%)
- All 525 comments have been addressed as of May 29, 2022
- EWG to perform final review
- Draft to be sent for TC95 “recirculation” soon
The latest draft C95.7

- C95.7 will become an IEEE standard (it is about compliance)
- Is intended to be applicable with a wide range of standards/guidelines
- Much more extensive in terms of detail (138 pages)
- Development of an EME Safety Program starts with establishing a policy wrt exposure

IEEE SC2 online meeting (6-2-2022)

The latest draft C95.7

- A hazard assessment phase is part of the process (a structured process to gather the information necessary to develop a SP)
- Continues to use the categorization process explained in 2014 version
- Clarifies the difference between awareness education and safety training
- Merges “low frequencies” with RF
- SP shall consider “concomitant hazards” (also called indirect hazards)

IEEE SC2 online meeting (6-2-2022)

Thank you to all who took the time to review and provide comments

The EWG is grateful to those who helped submit a total of 1,295 comments in the balloting to this date. The EWG treated each comment with respect and made every effort to accommodate each comment as best possible, sometimes agonizing over just the best way and expending lots of time. Carefully examining each comment helped us make C95.7 better and more useful. In the case of rejected comments, it does not mean that the comment was not necessarily helpful in our thinking.
Thank you to all who took the time to review and provide comments

Adhering to the IEEE Style Manual as suggested by several is important and the IEEE SA mandatory editorial review will help clean up any issues that may remain at time of submittal.

IEEE SC2 online meeting (6-2-2022)

6. Discussion of revision draft by meeting attendees

8. Request for suggestions on topics for future technical presentations

9. New business

10. Time and place of next meeting – Likely Chandler, AZ?

11. Adjourn

IEEE TC95-SC2 Meeting: June 2022

Phil Hung, P.E.
Senior Advisor
Southern California Edison Safety

A Quick Look at SCE's RF Energy Safety Program

IEEE SC2 online meeting (6-2-2022)
<table>
<thead>
<tr>
<th>Participant</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>DH</td>
<td>Don Haes</td>
</tr>
<tr>
<td></td>
<td>Me</td>
</tr>
<tr>
<td>AD</td>
<td>Amnon Dudevany</td>
</tr>
<tr>
<td>AT</td>
<td>Art Thansandote</td>
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<tr>
<td>AS</td>
<td>Asher Sheppard</td>
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<tr>
<td>AR</td>
<td>Auke Visser- RNLN</td>
</tr>
<tr>
<td>BB</td>
<td>Bill Bailey</td>
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<tr>
<td>BC</td>
<td>BOB CURTIS</td>
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<td></td>
<td>Call-in User_2</td>
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<tr>
<td>CC</td>
<td>C-K Chou</td>
</tr>
<tr>
<td>EK</td>
<td>Efthymios Karabetsos</td>
</tr>
<tr>
<td>GL</td>
<td>Greg Lapin</td>
</tr>
<tr>
<td>GM</td>
<td>Gulmira Mustapaeva</td>
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<tr>
<td>JF</td>
<td>James Futch</td>
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<tr>
<td>JD</td>
<td>John DeFrank</td>
</tr>
<tr>
<td>KF</td>
<td>Kevin Fisher</td>
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<tr>
<td>KK</td>
<td>Kim Kantner</td>
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<td></td>
<td>Marv Ziskin</td>
</tr>
<tr>
<td>M</td>
<td>Matt (Matt Butcher)</td>
</tr>
<tr>
<td></td>
<td>Maxson</td>
</tr>
<tr>
<td>MI</td>
<td>Michel Israel</td>
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<tr>
<td>PZ</td>
<td>Peter Zollman</td>
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<tr>
<td>RM</td>
<td>Rajat Mathur</td>
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<tr>
<td>R</td>
<td>Richard (Richard Curtis)</td>
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<tr>
<td>RK</td>
<td>Rob Kavet</td>
</tr>
<tr>
<td>RJ</td>
<td>Robert Johnson</td>
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<tr>
<td>RG</td>
<td>Romeo Gallamoza</td>
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<td>TH</td>
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<td>Tim Mikulski</td>
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<tr>
<td>XZ</td>
<td>Xun Zhao</td>
</tr>
<tr>
<td>YI</td>
<td>Yujuan Zhao Intel</td>
</tr>
</tbody>
</table>
from John DeFrank to everyone:  9:49 AM
my audio is a little garbled.  Is there a call in number?

from Don Haes to everyone:  9:50 AM
you can also dial 173.243.2.68 and enter your meeting number 2330 990 3252.

from Rob Kavet to everyone:  9:50 AM
Rob Kavet

from C-K Chou to everyone:  9:51 AM
C-K. Chou, TC95 Chair

from Xun Zhao to everyone:  9:51 AM
Xun Zhao, DND Canada

from John DeFrank to everyone:  9:53 AM
thank you.  I dialed in on my phone and the audio is much improved.

from James Futch to everyone:  9:56 AM
James Futch, DOH Radiation Control, Florida

from Don Haes to everyone:  9:58 AM
Don Haes, Secretary SC2

from Rajat Mathur to everyone:  9:58 AM
Rajat Mathur, Hammett & Edison, Inc

from Maxson to everyone:  10:00 AM
David Maxson, Isotrope

from Greg Lapin to everyone:  10:00 AM
Greg Lapin, ARRL

from Romeo Gallamoza to everyone:  10:00 AM
Romeo Gallamoza, U.S. Army Public Health Center

from Robert Johnson to everyone:  10:00 AM
Bob Johnson, Consultant, EME Safety, LLC

from Asher Sheppard to everyone:  10:00 AM
Asher Sheppard, Asher Sheppard Consulting, Santa Rosa, Calif., a.s.consulting@att.net

from Richard to everyone:  10:01 AM
Richard Curtis, RF Safety Compliance

from Yujuan Zhao Intel to everyone:  10:01 AM
Yujuan Zhao, Intel

from Amnon Duvdevany to everyone:  10:01 AM
Amnon Duvdevany, Israel Institute for Occupational Safety and Hygiene, Israel

from Kevin Fisher to everyone:  10:04 AM
Kevin Fisher, Smith and Fisher
from Bill Bailey to everyone: 10:05 AM
Bill Bailey

from Matt to everyone: 10:05 AM
Matt Butcher, Sublight Engineering

from John DeFrank to everyone: 10:05 AM
John DeFrank, US Army, IEEE SA member

from BOB CURTIS to everyone: 10:05 AM
Bob Curtis, U of Utah, RF Safety Compliance, (retired OSHA)

from Gulmira Mustapaeva to everyone: 10:05 AM
Gulmira Mustapaeva, FCC

from Efthymios Karabetsos to everyone: 10:05 AM
Efthymios Karabetsos, Greek Atomic Energy Commission

from Peter Zollman to everyone: 10:05 AM
Attending - Peter Zollman, (PZC, individual) UK

from Tim Harrington (privately): 10:05 AM
Tim Harrington; FCC OET Lab. Div.; observer; gadfly; IEEE-SA member; participant IEC-TC-106 joint-WGs with ICES-TC34

from Art Thansandote to everyone: 10:17 AM
Art Thansandote, Health Canada (Retired)

from Michel Israel to everyone: 10:18 AM
Attending - Michel Israel, NCPHA and Medical University, Bulgaria

from Auke Visser- RNLN to everyone: 10:22 AM
Auke Visser, RNLN

from John DeFrank to everyone: 10:44 AM
Reminds me of Sisyphus

from Marv Ziskin to everyone: 11:04 AM
Marv Ziskin Temple University School of Medicine

from Michel Israel to everyone: 11:59 AM
Thanks to Ric Tell for organizing this meeting. All presentations were very interesting and practically useful. Thank you!
APPENDIX D

Major New EME Safety Requirements in C95.7 (and FCC for RF)

Organizations may need help/guidance, particularly on these:

1. Safety Plans
   - Required for each fixed site. 47 CFR 1.1307(b)(4)(i)

2. “Positive Access Controls”
   - Such as locked gates to prevent public from entering RF restricted areas. 47 CFR 1.1307(b)(4)(iii)

3. Signs
   - New FCC specifications, such as describing “Behavior necessary to comply” to FCC limits. 47 CFR 1.1307(b)(4)(v)

4. Documented Training
   - “Instant training” via signs is not sufficient training. (Note C3.106)
   - Documented training must be provided to all persons who access RF restricted areas including for temporary maintenance activities. 47 CFR 1.1310(a)(2)(iii)

Example RF Safety Plan in Updated Version of C95.7– Only 3 to 5 Pages
Try to convince your clients/organizations/companies not to wait for “ugly” enforcement.

Establishing the new norm by regulators (FCC, OSHA) takes decades.

Very few compliance officers (e.g., visit by OSHA once every 80 years)

Ugly because the inspections are driven by complaints.

Insurance carriers and court claims can be “ugly” compliance motivators.

Ugly due to inconsistent results and heavy time consumption.

Practitioners often used to defend against the standards.

Good Licensees, Property Owners, Contractors Will Demand Effective RSPs

Licensees: Do not mount antennas on sites without an agreed on RSP.

Contractors: Do not work on sites without an agreed on RSP.

Property Owners: Implement an RSP enforced by lease and work-order contracts. Only accept tenants who agree to comply. Only allow contractors on the property who agree to comply.

Need assistance in selecting “Positive Access Controls”

1. Safety Plans
   Required for each fixed site. 47 CFR 1.1307(b)(4)(ii)

2. "Positive Access Controls"
   Such as locked gates to prevent public from entering RF restricted areas. 47 CFR 1.1307(b)(4)(vii)
Especially for small sites, rooftop sites and sites with multiple tenants.
Transition to signs with site specific information.

1) Location of RF Restricted Areas
2) What to do if they need to enter an RF Restricted Area

Good RF signs provide brief answers to both.

Notice Sign on locked access gate. Some generic wording does not apply. Some missing FCC requirements.

Caution Sign at base of tower. Better if more specifics are given, such as how far to stay back from antennas.

Generic yellow sign may conflict with actual conditions.

Signage is inconsistent. Need assistance in determining what is required.
Generic yellow sign may conflict with actual conditions. e.g., “3 feet clearance” may not be adequate; enforcing personal monitors?
Other Compliance Issues: Interpretations of the Requirements

1. **RF Safety Plans**
   Required for each fixed site. 47 CFR 1.1307(b)(6)(ii)

2. **“Positive Access Controls”**
   Such as locked gates to prevent public from entering RF restricted areas. 47 CFR 1.1307(b)(6)(iii)

3. **RF Signs**
   New FCC specifications, such as describing “Behavior necessary to comply” to FCC limits. 47 CFR 1.1307(b)(6)(v)

4. **RF Training**
   - **“Instant training”** via signs is not sufficient training. (Note C3.106)
   - **Documented training** must be provided to all persons who access RF restricted areas including for temporary maintenance activities. 47 CFR 1.1307(b)(2)(ii)

More than signs; A Safety Sheet should provide adequate Training

- Use procedures adopted by your fabricator which ensure compliance with FCC RF exposure limits and guidelines. Ensure that all persons who access RF restricted areas are provided with a copy of the Safety Sheet.
Radio Frequency (RF) Safety at SCE

Southern California Edison

SCE System
- Largest electric utility in California
  - 13 million residents
  - 4.8 million customer accounts
  - 50,000 square-mile service area
- Earnings model
  - SCE earnings are decoupled from demand
  - Earnings driven by CPUC and FERC approved rate of return on earning asset base
  - Cost inflation forecast included in general rate case
- Customer and load growth
  - 2008 new connections forecast (~48,500) represents just over 60% of five-year average and a decline of 28% from new connections in 2007
  - 2008 peak demand expected to grow to over 23,500 MW, 1% above 23,303 MW peak demand in 2007

Federal RF Safety Regulations

- Code of Federal Regulations Title 47, Part 1.1307b
- Federal Communications Commission (FCC) Office of Engineering and Technology Bulletin 65 (FCC OET-65)
RF Safety in Perspective

- Since 2000, SCE safety professionals have evaluated many SCE work locations and facilities for RF exposure.
- Some potential RF over-exposure conditions may exist at multiple antenna locations, such as rooftops, customer facilities, or mountain-top communications sites with broadcast antennas.
- Historical SCE occupational health and safety data shows no record of any RF exposure injuries nor any employee-reported RF over-exposure incidents.

Perspective: Exempt Equipment

Some RF equipment types either do not transmit a signal (receive-only) or use too little power to cause significant RF exposure and include:

- Cellphones / blackberries / PCS Phones / I-phones / PDAs
- Pagers
- Computers
- Handheld ("trunked") Radios
- WiFi Networks
- Cell / PCS Tower sites at ground level
- NETCOMM Transmitters
- Satellite TV Antennas
- AMR Meters
- "Smart" Metering Products
- TVs / DVD Players / other Consumer electronics
- Typical home and office RF signal emitters

Measurements Down on the Meter Farm

Using a Narda SRM-3006 for measurement

RF Fields vs Distance in Meter Farm with 10 Meters Operating Continuously

Distance from meter rack (feet) vs. RF Field (V/m)
**Potential RF Over-Exposure Hazards**
- Cancer Concerns, Other Symptoms (EHS)
- Implanted Medical Device Susceptibility
- RF Shocks and Burns
- **RF Heating:**

**California Code of Regulations Title 8 Section 5085**

Exposure Limits. Employees shall not be exposed to RF energy from continuous wave or repetitively pulsed sources exceeding any of the following limits as averaged over any possible six-minute (0.1 hour) period.

From 3 MHz and 300 GHz:

Continuous exposure to an average maximum power density of 10 mW/cm²

or the equivalent free space average electric and magnetic field strengths of 200 V/M rms and 0.5 A/M rms respectively

**FCC MPE Limit Safety Factor**

<table>
<thead>
<tr>
<th>&gt; 10 x MPE</th>
<th>Potential Serious Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 x MPE</td>
<td>Potential Tissue Damage</td>
</tr>
<tr>
<td>SAFETY</td>
<td>MARGIN</td>
</tr>
<tr>
<td>SAFETY MARGIN</td>
<td>SAFETY MARGIN</td>
</tr>
<tr>
<td>100% MPE</td>
<td>FCC Occupational MPE</td>
</tr>
<tr>
<td>20% MPE</td>
<td>Occupational Exposure</td>
</tr>
<tr>
<td>0% MPE</td>
<td>General Population Exposure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RF Safety Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Restrictions</td>
</tr>
</tbody>
</table>
Multiple Antenna / Broadcast Sites

GO-1 Rooftop Over-Exposure:
> 500% of FCC MPE at 1 foot
and > 120% FCC MPE at 3 feet

GO-1 Rooftop Over-Exposure:

FCC Regs Require Employers to:

- Make employees fully aware of potential RF exposures and how to limit their exposures in the workplace (Training)

- Put in place methods and systems to control RF exposure to ensure employees are not overexposed (Engineering and administrative controls)
### SCE's RF Safety Tool: APM-114

<table>
<thead>
<tr>
<th>Work Location</th>
<th>Closest Horizontal Approach Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passing by at the same level as omni directional antennas</td>
<td>3 ft</td>
</tr>
<tr>
<td>Working at the same level near omni directional antennas</td>
<td>10 ft</td>
</tr>
<tr>
<td>Working within 2 feet above or below omni directional antennas</td>
<td>3 ft</td>
</tr>
<tr>
<td>Passing by at the same level in front of directional and microwave antennas</td>
<td>3 ft</td>
</tr>
<tr>
<td>Passing by at the same level behind directional and microwave antennas</td>
<td>1 ft</td>
</tr>
<tr>
<td>Working at the same level behind directional and microwave antennas</td>
<td>3 ft</td>
</tr>
<tr>
<td>Working at the same level in front of directional and microwave antennas</td>
<td>10 ft</td>
</tr>
<tr>
<td>Working within 2 feet above or below in front of directional and microwave antennas</td>
<td>4 ft</td>
</tr>
</tbody>
</table>

### APM-114 Omni Drawing

### Directional Antenna Drawing

### Microwave Antenna Drawing
Omni-Directional Distances

Directional and Microwave Distances

What if an employee cannot maintain the APM-114 distances

or

They encounter Yellow CAUTION or higher RF alert signs?

Personal RF Exposure Monitors

“Nardalert”
Measuring RF Exposure
RF Surveying Meters - Better Accuracy

Site RF Evaluation Example

How to Implement RF Safety at Your Work Location

- Identify SCE facilities with antennas in your AOR
- Get familiar with APM-114
- Determine if RF safety signs need to be placed at any of your facilities
- Use the Implementation Guide
- RF Safety support Available from B/U SES and Corporate Safety EMF & Energy

Questions?
Electric & Magnetic Fields (EMF)

EMF & Energy Group
Southern California Edison

Overview of 60 Hz EMF

- Electric and magnetic fields (EMF) are created whenever electricity flows.
- EMF have not been shown to cause adverse health effects.
- Questions remain about a possible connection between EMF and health effects.
- Research continues.
- California has progressive regulatory policies to address EMF concerns.
- SCE is committed to following those policies.

California Public Utilities Commission's EMF Policy

- No federal or California state regulations on EMF exposure limits
- CPUC's precautionary EMF policy
  - EMF education programs
  - Low-and-no-cost field reduction measures required for all new-or-rebuilt electrical facilities
- SCE's compliance with the CPUC's EMF policy
  - Magnetic field measurements & workshops
  - Field management plans to assess field reduction design options (e.g. raising conductor height)

SCE EMF RESOURCES

- SCE EMF 800 number: 1 (800) 200 - 4723
- Phone Centers
- Bill Insert/Customer Communication
- Web Page to Provide Information

http://www.sce.com/EMF
Employees with Implanted Medical Device (IMD)

Case Study:
A Lineman Coming back to Work with an IMD

- A Distribution Lineman had a pacemaker implanted. It was determined that he was no longer suitable to continue as a Lineman.
- The District Manager requested EMF & Energy Group to evaluate whether this employee could take on a Coordinator of Construction & Maintenance (CCM) position by surveying the work environment.

Sample Data Sheet from an IMD Manufacturer

<table>
<thead>
<tr>
<th>Electromagnetic Field Type</th>
<th>Frequency</th>
<th>May Interfere with Boston Scientific pacemakers or defibrillators</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-field (AC)</td>
<td>50/60 Hz</td>
<td>≥ 6.5 kV/m</td>
</tr>
<tr>
<td>B-field (DC)</td>
<td>0 Hz</td>
<td>≥ 1 mT or ≥ 10 G</td>
</tr>
<tr>
<td>B-field (AC)</td>
<td>50 Hz</td>
<td>≥ 80 A/m (≥ 0.1 mT or ≥ 1 G)</td>
</tr>
<tr>
<td></td>
<td>60 Hz</td>
<td>≥ 66 A/m (≥ 0.083 mT or ≥ 0.83 G)</td>
</tr>
</tbody>
</table>

The B-Field (DC) parameter designates a static magnetic flux density created by permanent magnets or from DC current flowing through a cable or conductor. Common sources may include industrial equipment utilizing permanent magnets and electric motors.

The B-Field (AC) parameter designates a dynamic magnetic flux density generated by current flowing through a cable or conductor carrying AC current. Common sources may include high voltage power lines, transformers, open electrical panels, industrial equipment such as induction motors and induction heaters, and other equipment sourced by high levels of AC current. The magnetic field strength (H-field) is derived from the magnetic flux density (B-field) using the permeability of free space.
### Pacemaker/CRT-P RIGHT PECTORAL

<table>
<thead>
<tr>
<th>Electromagnetic Field Type</th>
<th>Frequency</th>
<th>May interfere with Boston Scientific pacemakers or defibrillators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E-field</strong></td>
<td>50/60 Hz (AC)</td>
<td>≥ 6.5 kV/m</td>
</tr>
<tr>
<td><strong>B-field (H-field)</strong></td>
<td>0 Hz (Static/DC)</td>
<td>≥ 1 mT or ≥ 10 G</td>
</tr>
<tr>
<td></td>
<td>50 Hz (AC)</td>
<td>≥ 134 A/m (≥ 0.167 mT or ≥ 1.67 G)</td>
</tr>
<tr>
<td></td>
<td>60 Hz (AC)</td>
<td>≥ 110 A/m (≥ 0.138 mT or ≥ 1.38 G)</td>
</tr>
</tbody>
</table>

The B-field (DC) parameter designates a static magnetic flux density created by permanent magnets or from DC current flowing through a cable or conductor. Common sources may include industrial equipment utilizing strong permanent magnets and electric motors.

### Defibrillator/CRT-D

<table>
<thead>
<tr>
<th>Electromagnetic Field Type</th>
<th>Frequency</th>
<th>May interfere with Boston Scientific pacemakers or defibrillators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E-field</strong></td>
<td>50/60 Hz (AC)</td>
<td>≥ 11.7 kV/m</td>
</tr>
<tr>
<td><strong>B-field (H-field)</strong></td>
<td>0 Hz (Static/DC)</td>
<td>≥ 1 mT or ≥ 10 G</td>
</tr>
<tr>
<td></td>
<td>50 Hz (AC)</td>
<td>≥ 180 A/m (≥ 0.2 mT or ≥ 2 G)</td>
</tr>
<tr>
<td></td>
<td>60 Hz (AC)</td>
<td>≥ 132 A/m (≥ 0.166 mT or ≥ 1.66 G)</td>
</tr>
</tbody>
</table>

The B-field (DC) parameter designates a static magnetic flux density created by permanent magnets or from DC current flowing through a cable or conductor. Common sources may include industrial equipment utilizing strong permanent magnets and electric motors.

### S-ICD

<table>
<thead>
<tr>
<th>Electromagnetic Field Type</th>
<th>Frequency</th>
<th>May interfere with Boston Scientific pacemakers or defibrillators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E-field</strong></td>
<td>50/60 Hz (AC)</td>
<td>≥ 6.5 kV/m</td>
</tr>
<tr>
<td><strong>B-field (H-field)</strong></td>
<td>0 Hz (Static/DC)</td>
<td>≥ 1 mT or ≥ 10 G</td>
</tr>
<tr>
<td></td>
<td>50 Hz (AC)</td>
<td>≥ 80 A/m (≥ 0.1 mT or ≥ 1 G)</td>
</tr>
<tr>
<td></td>
<td>60 Hz (AC)</td>
<td>≥ 60 A/m (≥ 0.083 mT or ≥ 0.83 G)</td>
</tr>
</tbody>
</table>

The B-field (AC) parameter designates a dynamic magnetic flux density generated by current flowing through a cable or conductor carrying AC current. Common sources may include high-voltage power lines, transformers, open electrical panels, industrial equipment such as induction motors and induction heaters, and other equipment sourced by high levels of AC current. The magnetic field strength (H-field) is derived from the magnetic flux density.