STAC RF Awareness Sub-Committee Notes
Meeting: November 2, 2016; 1:30 p.m. – 2:30 p.m.

Structure, Tower & Antenna Council
Conseil des structures, pylônes et antennes

Action Items:

- Committee members to review changes to Best Practice doc relating to benefits of personal monitors to site owners (see italicized ine in notes below)
- Committee members to suggest any additional frequencies to be included in document via email to Nick (see document for current list of frequencies)
- Nick to ask Neill about whether to include note in document about condensation on monitors skewing results
- Committee members to email Nick if interested in getting involved in regular meetings to work on Identifying RF Hot Zones Best Practice document
    - Nick to email current team members to coordinate first meeting
- Committee members to email Nick if interested in helping to write RF chamber experiment proposal, or if they are potentially interested in attending the test
- Nick to discuss potential RF chamber test scenario with Greg and Dan
- Nick to send out unreviewed sections from the document with any questions he might have for the committee to review (SENT OUT WITH MEETING NOTES)

Attendees:

- Nick Kyonka (STAC)
- Sam Fadlallah (Rogers)
- Alex Williams (PSEC)
- Cris Bursugiu (Rigarus)
- Dan Renaud (Telecon)
- Deanna Spring (WSP)
- Greg Gasbarre (Netricom)
- Jason Bartsch (SaskTel)
- Jason Wolf (WesTower)
- John Addy (Advantage)
- John McKay (Grundy)
- Richard Zhang (Rogers)
- Roy Holland (Rogers)
- Steve Miholic (Bell)
- Tom Lee (Rogers)
- Yolaine Germain (CIMA)

Meeting Notes:

1. **Personal RF Monitor Best Practices**
    a. **Update**
    - Nick notes that we have continued working on this project since the last meeting and are getting close to completing the document
        - Have added information on the mitigating damage to units, and on the limitations of personal monitors
        - Have also re-written sections to simply them so this document is easier to read for people in the field who do not have a background in RF science
            - Have tried to strike a balance here, and would appreciate hearing from anyone who thinks that any parts of this booklet may be confusing to the intended audience: workers
        - Also have a number of questions still, which will be brought up as we review this document
    - Nick thanks the volunteers who have been involved in this project, including Neill Harlen (Interfax), Dan Renaud (Telecon), Keith Ranney (Bell), Dave Ramdeane (Bell), Greg Gasbarre (Netricom) and Mathew Kozeil (Stantec)

    b. **Review**

- Nick asks for any initial comments or concerns: none expressed
- Committee members ask Nick to read the document aloud during the review; changes and topics discussed as follows:
    - Introduction:
        - Nick asks whether terms "photons" or "electron volts" should be added to the document glossary
            - General agreement to add both
        - Nick asks whether the term "bond atom changes" should be included or if there might be a better way to word this
            - General agreement to change to "atomic changes"
        - Committee member asks whether there is a source for the line that says that ionization starts at 2,420 million MHz
            - Nick to track down and add source
    - Benefits and Practical Uses of an RF Monitor:
        - Committee member asks about third bullet point in "Specific Applications of Uses" section: asks what this line means and what the processes around it are
            - Dan says this relates to use of a personal monitor to verify that there are no high power transmissions, suggesting that the transmitters have been turned off
            - Committee member recommends we add the words "and remain off" to this bullet point
        - Nick asks whether fourth bullet point is potentially confusing
            - General agreement that this line is OK as is
        - Committee member suggests changes to the line addressing benefits for owners
            - Edited paragraph now reads: "*Site-owners also can benefit from the use of personal monitors as this could allow them to feel confident that any hot zones will be identified appropriately. Owners may also benefit from improved public opinion by demonstrating that they are aware of any potential hazards.*"
                - Committee members to review via notes and provide comments or concerns to Nick
- Features of an RF Monitor:
    - Committee member suggests adding a line identify audible alarms as a feature
        - General agreement
- Using an RF Monitor:
    - Committee members add frequencies to be covered:
        - Cellular: 700 MHz, 3500 MHz
        - Paging: 140-170 MHz, 450 MHz, 900 MHz
        - Microwave: 300 MHz – 300 GHz
        - Government technologies: 2 MHz – 30 MHz
        - Satellite retransmitters: 2 GHz – 12 GHz
    - Committee members to suggest any additional frequencies to be included to Nick via email

- Committee members suggest we add disclaimer: "Please note that this list is not inclusive of all frequencies and technologies in use in Canada."
- Nick notes that Neill had also proposed including more information about frequency shaped response in this section, but Nick removed much of it and intends to include brief definitions in the glossary
  - Nick asks for committee's opinion on this change
    - General agreement

- Pre-Use Inspection:
  - No comments
- Wearing a Monitor:
  - Committee member asks whether there should be note about people with pacemakers not wearing monitor on chest
    - Nick says he was under the impression that people with pacemakers were not allowed to work around RF at all
      - Dan says people with pacemakers should not work around high RF because it can interfere with the pacemaker operations
- Mitigating Potential Damage:
  - Nick asks how long of wait is required to reduce condensation on the monitor
    - Greg says about 20 minutes is a good general guideline; notes that condensation can skew results
      - Nick asks if this is something that should be noted in the booklet
        - Nick to ask Neill if he believes this should be included
  - Nick asks if there is anything missing
    - No one has anything to add
  - Committee member asks if anyone has had problems with people clipping a monitor onto a metallic object on their belt, like a d-ring; says they have found that doing this can cause the monitor to go off when it shouldn't
    - Says this has happened on broadcast sites with S3
    - Dan notes that his crews typically wear monitors at shoulder length since they are typically climbing
- Nick pauses review due to lack of time; says we will review remaining sections at later date

2. Identifying RF Hot Zones Best Practices

a. Update

- Nick notes that unlike the Monitor Best Practices project, our initial project idea has not moved along much in recent months
  - Says committee previously started developing a list of Do's and Don'ts, and we have a general index for the document in mind, but there has been no other movement on this file
  - Says he would like to start holding regular conference calls to move this project along
    - This has been tremendously helpful to other STAC projects

- Allows us to work together in a group on some parts, and to assign additional research and writing as need be

b. Call for volunteers

- Nick asks if anyone is potentially interested in getting involved in the regular calls
  - Dan (Telecon), Greg (Netricom), John (Grundy), and Steve (Bell) volunteer
  - Nick invites others interested in getting involved to email him
  - Nick to start email chain with team to discuss scheduling of these meetings

3. Other business

a. RF Chamber Test

- Last month, three STAC Members attended an informal RF monitor test in Toronto
  - Original intent was to get a sense as to whether the Narda S3 and FieldSENSE monitors provided similar readings, though the unscientific nature of the experiment caused us to conclude that our readings would not be reliable
  - General takeaway from this test was that we felt that we did not know how to properly operate the FieldSENSE monitor to ensure consistent readings
  - Have been in touch with FieldSENSE since then to inquire about getting more information, though I am still waiting to coordinate a call with their rep
- At the same time, someone mentioned that the Department of National Defence may have RF chambers that they may be willing to let STAC use for a proper test
  - DND, which has recently joined STAC as an Honourary Member, confirmed just last night that they do have a chamber and that STAC could be permitted to use it
  - We must now develop a formal proposal, and are looking for a few volunteers to work on this over the next two weeks
  - Though we are not yet sure how many representatives STAC will be permitted to send, we are also seeking expressions of interest from anyone who would be interested in attending
    - Preference will obviously be given to those with a thorough understanding of RF issues, and to those who assist with the proposal development
    - Nick invites committee members to send him email to express interest in helping with writing the proposal or in attending the test
  - Would also like to ask whether anyone has suggestions for any additional tests they believe we should attempt when we have access to the chamber, or if they have any monitor- or RF-related questions that they believe could be solved through this opportunity
    - Dan says this would be a good opportunity to test out the problem Greg described
      - Nick to contact Greg and Dan to ensure he has proper understanding of issue and how it should be tested
- Nick to send out unreviewed sections from the document with any questions he might have for the committee