

**Section I Appliances in Sleeping Room**

**Q1 & Q2**

Please fill in questions 1 and 2 from the Phase I questionnaire, before visiting the house for Phase II measurements.

**Q1**

This is the room identified in question 1, page 5 of the EMF Phase I questionnaire, in Section I, "Residential Room Identification".

**Q2**

The questions about appliances *in the sleeping room* are questions 7 to 9 on page 9 of the Phase I questionnaire, in Section II, "Residential Appliance Questionnaire".

**Q5, 6 & 7**

If one of these appliances was used in the month of interest, please contact the family *before* the Phase II visit, and ask them if the appliance is still present, and if it can be on during Phase II measurements (NSH or underfloor heating) or sent away for testing (electric blanket).

---

**Section I Appliances in Sleeping Room (cont.)**

**11 Residential Measurement Record****PHASE II: Measurement Sequence (continued on p.8)**

Measurement note: room code and description against start/stop no., whether fluorescent tube lights are in the room and on or off, appliances ON or walls < 1m from element position and any comments. For all of the measurements, please use a 1m Emdex pole. Main menu options are given in "CAPITALS", sub-menus in "lower case".

**attery** Attach an alkaline 9V battery, switch ON and check the battery status. If it is less than **95%** (switching on/off a few times if not), then a new battery is needed.

**ck Box Check Measurement:** At home, or in the regional centre, please do the following:

**sure the display is set to "resultant"** - to see the black box measure (no need if switching ON as "resultant" is the default). [Go to "DISPLAY" on the main menu with (+) (-); press EVENT button; go round display menu with (+) and (-) until "resultant" displayed; press EVENT button to return to main menu.]

**itch on Black Box** - at mains and at the back of the box. A red light should come on at the rear.

**ke Black Box Instrument Check Measurement** [Go to "RUN" on the main menu with (+) or (-); insert Emdex partially into black box; press EVENT button once; insert fully into black box; insert fully into black box; wait 3 minutes; check that the reading is around 50 (if it is not 45-56, after checking possible reasons, inform your supervisor); stop instrument with (+) and (-) buttons held down together and single push of EVENT button; note reading in mG and b.b. serial no. in appropriate boxes; note "ch" as measurement code against start/stop no., and "black box check" as measurement description.]

**ange display to "battery"** - so no results seen (might be easier at home). [Go to "DISPLAY" on the main menu with (+) or (-); press EVENT button; go round display with (+) or (-) until "battery" displayed; press EVENT button to return to main menu; go to "STANDBY" or "RUN", whichever appropriate, on main menu with (+) or (-).]

**ke a spot measurement at the centre of the family room - 1 metre high stand** [Go to "RUN" on the main menu with (+) or (-); place instrument in stand; place instrument in 1m stand at centre of family room; press EVENT button; wait 3 minutes; stop instrument with (+) and (-) buttons held down together and single push of EVENT button; note code and measurement description against start/stop number and ANY APPLIANCES ON OR WALLS < 1m FROM EMDEX.]

**ntify the position for bedside 48 hour measurement.** [bedside 48 hour measurement position is at bedside on side towards the centre of the room, as close as possible way down the bed; identify any appliance(s) normally operating overnight; (e.g. night storage heater, clock-radio, other etc.); record distance from the Emdex in this 48-hour measurement position to the appliance by the start/stop no. (as usual); additionally, for this measurement only, please record the distance from the appliance to the BMP (the n 20cm footwards below the pillow on the midline of the bed) on the line provided at the bottom of the page.

**nulate overnight setup for spot measurements SWITCH ON/OFF MAINS APPLIANCES < 1M FROM EMDEX USUALLY ON/OFF AT NIGHT (this includes immersion s). ELECTRIC BLANKETS MUST BE OFF DURING BED MEASUREMENTS.**

**ke a spot measurement at the 48 hour measurement position - 1 metre high stand.** [Go to "RUN" on the main menu with (+) or (-); place instrument in 1m stand; press EVENT button; wait 3 minutes; stop instrument with (+) and (-) buttons held down together and single push of EVENT button; note code and measurement description against start/stop number and ANY APPLIANCES ON OR WALLS < 1m FROM MEASUREMENT POSITION.]

## 1 II Residential Measurement Record

PHASE II: Measurement Sequence (cont.): Instructions for previous page

**Take a spot measurement on centre of child's pillow.** This is with the Emdex on the centre of the pillow, with display pointing towards the headboard. **ELECTRIC LETS MUST BE OFF DURING BED MEASUREMENTS.** [Go to "RUN" on the main menu with (+) or (-); place instrument on centre of pillow; press EVENT button; wait 3 minutes; stop instrument with (+) and (-) buttons held down together and single push of EVENT button; note code and measurement description against start/stop number and APPLIANCES ON OR WALLS < 1m FROM MEASUREMENT POSITION.]

**Take a spot measurement on centre of child's bed.** This is with the Emdex on the centre of the bed (halfway down from top to bottom, & left to right), with display pointing at pillow. **ELECTRIC BLANKETS MUST BE OFF DURING BED MEASUREMENTS.** [Go to "RUN" on the main menu with (+) or (-); place instrument on centre of bed; press EVENT button; wait 3 minutes; stop instrument with (+) and (-) buttons held down together and single push of EVENT button; note code and measurement description against start/stop no. and ANY APPLIANCES ON OR WALLS < 1m FROM MEASUREMENT POSITION.]

**Adjust the ON/OFF status of appliances** which have been changed to simulate overnight.

**JUST INSTRUMENT SAMPLING RATE TO 10 SECONDS.** [Go to "RATE" on main menu with (+) or (-); press EVENT button; go round "rate" menu with (+) or (-) until "10" displayed; press EVENT button to return to main menu; go to "RUN" on main menu with (+) or (-)]

**Take the continuous 48 hour bedside measurement - 1m metre high stand.** [Put stand in position chosen in 5). Go to "RUN"; partially insert Emdex into stand; press EVENT button to start instrument sampling; put Emdex into the stand head; secure lid of the stand head with a key; leave the Emdex sampling for a minimum of 48 hours; ask the person not to come near the stand with electrical appliances such as vacuum cleaners, hair dryers, computer games etc.; stop instrument with (+) and (-) buttons held down together and single push of EVENT button; note code (ET) and measurement description against start/stop no. and ANY APPLIANCES ON OR WALLS < 1M FROM MEASUREMENT POSITION.]

**JUST INSTRUMENT SAMPLING RATE BACK TO 1.5 SECONDS.** [Go to "RATE" on main menu with (+) or (-); press EVENT button; go round "rate" menu with (+) or (-) until "1.5 sec" displayed; press EVENT button to return to main menu; go to "RUN" on main menu with (+) or (-)]

**Repeat Spot Measurement Scheme.** In precisely the following order, make the following 3 minute spot measurements:

- 14) Simulate overnight situation in bedroom i.e. repeat (6)
- 15) Centre of bed spot measurement, i.e. repeat (9).
- 16) Pillow spot measurement, i.e. repeat (8).
- 17) Bedside 48 hour measurement position spot i.e. repeat (7);
- 18) Re-adjust on/off status of appliances i.e. repeat (10);
- 19) Family room spot measurement, i.e. repeat (4);

**Repeat Black Box Check Measurement (2) above).** Do NOT make any more measurements, e.g. a school measurement or another house measurement until:

- A: This repeat black box check measurement is made.
- B: The Phase II measurements have been downloaded (to filename "coded study no"+" .mdx" e.g. "01123a.mdx") and verified.

**N.B. DO NOT SWITCH OFF EMDX UNTIL DATA DOWNLOADED TO FLOPPY AND VERIFIED.**

**II To be completed by the REC: Details of External Sources**

REC Contact: \_\_\_\_\_

This section is used to determine:

- Whether there were any external sources (substations, underground cables, overhead lines or three phase distribution circuits) of interest near the address.
- If so, whether they were operating typically at Phase I measurement and during the year of interest.

Unless otherwise stated, all distances are to the centre of the home / school. BUT, for single classroom school measurements with sketch map attached (see p1), please measure distances to the centre of that classroom.

Typicality: Is there anything unusual about the local network, which might have made Phase I measurements unrepresentative?  Yes  No  Don't Know  
Please tick:

If yes, please describe: \_\_\_\_\_

Substations: During Phase I measurement, was there an operating substation within 20m of the location?  Yes  No  Don't Know  
Please tick:

If yes to substation:

Was the substation operating typically throughout the year of interest?  Yes  No  Don't Know  
Please tick:

Distance (metres) from nearest point of substation to the centre of home / school / classroom:

Primary Voltage (kV)   Circuits: Underground / Overhead (Please circle)

Secondary Voltage (kV)   Circuits: Underground / Overhead (Please circle)

Separated Phase Underground Cables (33 kV and above):

Most underground cables have conductors bundled together. We want only those with separated phases.

During Phase I measurement or at any time during the year of interest, were there any separated-phase REC cables of  $\geq 33$  kV within 20m of the centre of the home / school (multiple) / classroom (single)?  Yes  No  Don't Know  
Please tick:

If yes, please complete for each circuit:

Please note that all measured distances are of closest horizontal approach to centre-line of cable route.

<b>Cable Circuit 1</b>	Distance from residence (m) <input type="text"/> <input type="text"/>	*Cable outage at Phase I date & time? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NK	Estimate of total outage (in weeks) over year of interest if $\geq 4$ weeks (within 4 wks) <input type="text"/> <input type="text"/>
Voltage (kV): 33 / 66 / 132	Date if cable was added during the year of interest: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Date if cable permanently disconnected in year of interest: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
<b>Cable Circuit 2</b>	Distance from residence (m) <input type="text"/> <input type="text"/>	*Cable outage at Phase I date & time? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NK	Estimate of total outage (in weeks) over year of interest if $\geq 4$ weeks (within 4 wks) <input type="text"/> <input type="text"/>
Voltage (kV): 33 / 66 / 132	Date if cable was added during the year of interest: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Date if cable permanently disconnected in year of interest: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	

If more than one cable circuit present, Circuit 1 is the one closer to the address.

**II To be completed by the REC: Details of External Sources (cont.)**

Additional Information (cont.): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Low Voltage Three Phase Distribution Circuits, household addresses only:**

- Is there a 3 phase LV distribution circuit within 2m of the home exterior walls?  Yes  No  Don't Know  
 Please tick:
- If yes:**
- Is the above circuit overhead phase separated (open wire)?  Yes  No  Don't Know  
 Please tick:
- Is the above circuit a mural (undereaves) attachment to the residence?  Yes  No  Don't Know  
 Please tick:
- Is the above circuit feeding other houses on Economy 7/White Meter regimes?  Yes  No  Don't Know  
 Please tick:
- Is there any obvious reason (apart from E7/White Meter regimes) for the circuit to have a much higher average load during the night compared to day?  Yes  No  Don't Know  
 Please tick:

**If yes, please describe:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**NGC Lines and Cables:** Are there any National Grid lines of > 132 kV within 400m of the home/school, or 132 kV lines within 200 m, or cables within 20m?  Yes  No  Don't Know  
 Please tick:

**If yes:**  
 Please note that all measured distances are of closest horizontal approach to centre of lines.

	<u>Voltage</u> (circle as appropriate)	<u>Distance From Residence</u> (in metres)
Line / Cable	132 kV / 275 kV / 400 kV / Other: _____	<input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>
Line / Cable	132 kV / 275 kV / 400 kV / Other: _____	<input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>
Line / Cable	132 kV / 275 kV / 400 kV / Other: _____	<input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>

**III To be completed by the REC: Line Load Data (cont.)**

**Load Data Decision**

To determine whether load data are required please indicate, using the information marked with a "⇒" on the previous page, whether the following statements are true:

Is the operating voltage less than 66 kV?

Please tick:  Yes  No  Don't Know

An underground cable which does not have separated phases?

Please tick:  Yes  No  Don't Know

An overhead line, which is transposed, and the horizontal distance is more than 60m (for rating <600 A); 80m (for 600-1200 A); 120m (for >1200 A)

Please tick:  Yes  No  Don't Know

An overhead line, phasing not transposed, and the horizontal distance is more than 100m (for rating <600 A); 140m (for 600-1200 A); 200m (for >1200 A)

Please tick:  Yes  No  Don't Know

If you have answered "Yes" to any of the above, line load data are **not** required for the line / cable.

Are line load data required?

Please tick:  Yes  No  Don't Know

***If yes to load data required:***

Are line/cable load data available for the Phase I measurement date and time?

Please tick:  Yes  No  Don't Know

Are line/cable load data available for the year of interest?

Please tick:  Yes  No  Don't Know

Are line/cable load data available for the most recent year\*?

Please tick:  Yes  No  Don't Know

\* Note: Load data for the year of interest are preferred, but it is accepted that data for the most recent year might be all that are available. This is adequate.

***If yes to load data available:***

Two files of data are needed: one for the time of Phase I measurement, and the other containing one year's data (either the year of interest or the most recent year). If possible, please supply them as follows:

- As an ASCII file on a floppy disk.
- Disks to be labelled with REC name & the Identifying No. (on top RH corner of this form).
- Half hourly measurement intervals are sufficient.
- One file line per measurement interval, each line being identified by the date and time.
- If the load currents in the circuit(s) are available, then no other quantity is needed.
- If the current is *not* available, then MW is required, and, if possible, MVar and Voltage.

Phase I: File name: \_\_\_\_\_ Line no. for first line of data: \_\_\_\_\_

Description of each field on a line of data: \_\_\_\_\_

One year's data: File name: \_\_\_\_\_ Line r. \_\_\_\_\_

Description of each field on a line of data: \_\_\_\_\_