

GASTON COUNTY, NC

**LUDLUM MODEL 26 FRISKER
HAND-HELD MONITOR
GUIDANCE**

**This guidance can be altered and modified when
needed for specific conditions and situation**

**In support of North Carolina Emergency Response Plans
for Catawba and McGuire Nuclear Sites**

**On line edition of guidance is current
for the nuclear plan**

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LUDLUM MODEL 26 FRISKER

PURPOSE: To explain the proper guidance to be used for the operational check and use of the survey meter for the detection of radioactive material contamination.

GENERAL INFORMATION: The Ludlum Model 26 Frisker will be referred to as the survey meter for this guidance. This survey meter is a one piece all self contained unit. The meter is a small compact digital readout on one side and the probe's face on the other side. The probe is a thin window circular probe capable of detection of Alpha, Beta, and Gamma radiation.

All survey meters have been pre-set to alarm at 300 CPM or higher, which is the Action Level to determine if a person or item is deemed contaminated. No adjustment of this should be changed by field staff.

The survey meter's mode of operation is Counts Per Minute (CPM). If readings exceeds 1000 CPM then a "kcpm" display will appear on the screen instead of just "cpm". The max reading of this survey meter is 99.9 kcpm.

This guidance will be divided into two sections. The first will be the **Operational Check** of the survey meter and the second will describe the proper **Monitoring Technique**.

LUDLUM MODEL 26 FRISKER OPERATIONAL CHECK

1. Remove the survey meter from the carrying case.
2. Install 2 AA batteries by removing the cover located on the back of the handle. Turn screw counter clockwise a quarter turn to insert batteries. Make sure batteries "+" post are pointed upward. A low battery icon will be displayed on the screen if batteries drop to a set level of power.
3. When batteries are installed the survey meter automatically turns on. If not ready to do operational check now, then hold "On/OK" button on front for 3 seconds until meter turns off.
4. Turn the survey meter on by pressing the "On/OK" button once and releasing. The meter should activate all the LCD segments and the audio beep. Ensure that the "low battery" icon is not display, if so replace batteries.
5. Remove the clear plastic cover over the screen on the back side of the meter and **secure cover for reinstalling when survey meter is not in use**.
6. **Place the center of the probe over Check Source located in the carrying case. The source's range is labeled on the source's package. All survey meters can be checked using the same check source.**

7. Allow up to 30 seconds before reading the survey meter so that the reading is stabilized and then note and record the reading.
8. The source reading should be within the range of xxx kcpm and xxx kcpm that is recorded on the package of the check source.
9. If the survey meter reads within the range of the check source then meter is ready for use.
10. If the reading does not fall within the source's readings, redo operational check by making sure the source is centered and allow 1 minute for stabilization. If the meter reading is out of the source's range reading, you may try another check source since a check source may weaken below recorded range in time. If after all checks the survey meter continues to not read properly, do not use the survey meter.
11. Take a background reading in the area where there is no contamination present (if possible). Allow the background reading to stabilize for at least 1 minute. Record reading at the end of the 1-minute time period.
12. **Cover the survey meter's head with Saran Wrap type covering or similar thin covering** (do not use the clear plastic cover that is used to protect the screen from physical damage). Secure the Saran Wrap type covering so that there are no parts hanging down from the survey meter that would touch the areas to be surveyed.

LUDLUM MODEL 26 FRISKER MONITORING TECHNIQUE

1. Start survey of possible contaminated surface (person, equipment or vehicle) **by keeping the probe face approximately 1" from the surface and moving approximately one inch per second.**
2. Listen for the change in the audio clicks. Do not look at the meter reading while moving the probe (exceptions might be for in high noise areas, then you may need to monitor the meter's display).
3. If a **reading higher than 300 counts per minute (cpm) is found the audio alarm will sound constant.** Monitor that area slowly until the highest count rate and size of the area of contamination can be determined. Record the results on the appropriate form and continue the monitoring process until the entire surface is checked.
4. **If meter's comes in contact with any item and possibly is suspected of being contaminated,** remove the Saran Wrap type covering from the meter. Monitor the survey meter in question with another survey meter to ensure the survey meter is not contaminated. If determined that the survey meter is not contaminated then re-install clean covering and secure covering so that no part is hanging down from the probe.

5. Once monitoring of person, vehicle or other items are completed, turn off the survey meter by pressing the “On/OK” and holding for 3 seconds. The display will count down 3-2-1 and then shut off.
- 6. Install clear plastic covering over the screen of the survey meter for protection of the screen.** Store the survey meter in the appropriate case.

PLACEMENT OF HAND-HELD MONITORS

Hand-held monitors will be used at the following locations at minimum:

- Portal monitor station(s) to back up the walk-thru monitor
 - Some portal monitors will not reveal if contamination level is above 300 CPM, this will have to be confirmed by use of hand-held monitors at the spot check station
- Spot check station to verify reading
- End of shower area to re-monitor persons after showering
- At any other location(s) that the RAD Officer feels is needed

If vehicles are being checked as should be at the Emergency Worker Decon stations, hand-held monitors will also be needed at:

- Initial vehicle monitor station for both exterior and interior monitoring
- If staff assigned to monitor vehicle initially are the same to decon vehicles then same hand-helds can be carried with staff to do follow up monitoring after decon.
- But if other staff is assigned to vehicle decon then hand-helds will be needed at that station too for follow up monitoring to ensure count is below 300 CPM