

Cassette Analysis of Taped Conversations
From the NRC Operations Center
During the Accident at Three Mile Island Unit 2,
March 28, 1979

Report Date: May 14, 1979

NUCLEAR REGULATORY COMMISSION

CASSETTE ANALYSIS

MARCH 28, 1979

CHANNELS 2-20

0800-2400

DATE OF REPORT: MAY 14, 1979

SUMMARY REPORT

The period covered in this report is for the 16 hours commencing at 0800 hours through 2400 hours for the date of March 28, 1979.

Actual on-line operation commenced at approximately 0821 with signals commencing at 0823.23.

Channels 2 through 20 were scanned and each cassette was kept in its numbered sequence and stacked in coded boxes indicating the cassette numbering sequence, the type of cassette finding and all cassettes were maintained separated channels.

Color Coding: Each cassette was coded according to a predesignated sequence to facilitate immediate observation as to the recorded condition of the cassette and provide an immediate method of inventory control:

Red - Indicates cassettes which have line recording.

Amber - Cassettes which have cross-talk or low level signals (probably cross-talk) which could not be transcribed and should not be sent out.

Green - Cassettes which contain no signal recording whatsoever.

In order to facilitate the separation of cassettes by boxes without having to scan through each box, the boxes were then color coded using the same technique as outlined above. Therefore, boxes which are color coded in green have either no recording whatsoever or cross-talk or low signal cassettes which could not be transcribed and should not be sent out.

Note: It should be noted that cross-talk frequently occurs across channels 10 and 12, 2 and 16 and 18, which are indicative of a parallelling of lines within the telephone system.

NARRATIVE SUMMARY

The following narrative summary of all of the cassettes by channel as follows will provide an immediate overview of the amount of recording by channel in a description of what was found on each channel throughout the time period established above.

CHANNEL #2 :

Channel #2 was in extremely heavy usage throughout the entire morning through the afternoon until approximately 1630. It was noted that this channel apparently was wide open throughout the entire period. Because of this open mike condition throughout this time period through 4:30 in the afternoon, in addition to the telephone communications which have been recorded, there is also open mike recording of people in what apparently is a controlled center.

Since it is impossible to determine what items will be of significant interest in the evaluation of the recording on this channel, it is recommended that the log sheet be followed through 1630 and that all of the information throughout that period be transcribed. Subsequent to the time frame mentioned the recording is intermittent and the transcribing should only be achieved by the actual on-line log which identifies the specific times and frequency of recording. It should be noted also low level or cross-talk recording was also identified on the log though it also is of no significant value.

CHANNEL #3:

Channel 3 contained no recording whatsoever throughout the entire period and it is logged as clear. All of the cassettes have been so marked and stacked in the boxes in the proper time and cassette numbered sequence.

CHANNEL #4:

Channel 4 had heavy intermittent traffic during the first 5½ hours of operation. All of these times have been marked on a log sheet with the appropriate on and off sign off time. There is also cross-talk between Channel 4 and Channel 2 which has been identified but should not be transcribed.

CHANNEL #5:

Channel 5 contained no recording whatsoever throughout the entire period and it is logged as clear. All of the cassettes have been so marked and stacked in the boxes in the proper time and cassette numbered sequence.

CHANNEL #6:

Channel 6 had intermittent heavy recording which has been logged by sign and sign off time on the log sheet. In addition, Channel 6 had cross-talk between Channel 2 and Channel 8 which is of no significant value and should not be transcribed.

CHANNEL #7:

Channel 7 contained no recording whatsoever throughout the entire period and it is logged as clear. All of the cassettes have been so marked and stacked in the boxes in the proper time and cassette numbered sequence.

CHANNEL #8:

Channel 8 had some light mid-morning transmissions. In addition as indicated above there was significant cross-talk throughout the period coming from Channel 2. Cross-talk should not be transcribed.

CHANNEL 9:

Channel 9 contained no recording whatsoever throughout the entire period and it is logged as clear. All of the cassettes have been so marked and stacked in the boxes in the proper time and cassette numbered sequence.

CHANNEL 10:

Channel 10 had some light recording throughout the morning. Subsequently there was no significant recording and there was some cross-talk between Channel 10 and 12. The cross-talk should not be transcribed.

CHANNEL 11:

Channel 11 contained no recording whatsoever throughout the entire period and it is logged as clear. All of the cassettes have been so marked and stacked in the boxes in the proper time and cassette numbered sequence.

CHANNEL 12:

Channel 12 had a moderate amount of recording intermittently throughout the day. There was significant cross-talk between Channels 10 and 2. The cross-talk should not be transcribed.

CHANNEL 13:

Channel 13 contained no recording whatsoever throughout the entire period and it is logged as clear. All of the cassettes have been so marked and stacked in the boxes in the proper time and cassette numbered sequence.

CHANNEL 14:

Channel 14 had minute amounts of cross-talk which were identified as coming from Channel 2 by cross reference. There is nothing on Channel 14 of significant value and this Channel should not be sent out for transcription.

CHANNEL 15:

Channel 15 contained no recording whatsoever throughout the entire period and it is logged as clear. All of the cassettes have been so marked and stacked in the boxes in the proper time and cassette numbered sequence.

CHANNEL 16:

Channel 16 had light intermittent recording throughout the day and some cross-talk between Channels 2 and/or Channel 18. This cross-talk which occurred on these channels should not be sent out to be transcribed.

CHANNEL 17:

Channel 17 contained no recording whatsoever throughout the entire period and it is logged as clear. All of the cassettes have been so marked and stacked in the boxes in the proper time and cassette numbered sequence.

CHANNEL 18:

Channel 18 contains no significant recording other than cross-talk with Channel 16 and Channel 2. These cassettes should not be sent out to be transcribed.

CHANNEL 19

Channel 19 contained no recording whatsoever throughout the entire period and it is logged as clear. All of the cassettes have been so marked and stacked in the boxes in the proper time and cassette numbered sequence.

CHANNEL 20

Channel 20 contains minute amounts of cross-talk and no significant recording. This channel should not be sent out to be transcribed.

SUMMARY REVIEW

It is recommended that only those boxes which contain cassettes identified with red labels (that is cassettes which contain recording) should be sent out for transcription. All of these cassettes have had their tabs punched out which means that they cannot be accidentally erased by the transcription service. In addition, those cassettes which were marked with amber, that is cassettes which contain extremely low level recording which is evidently cross-talk, also had their tabs punched out to prevent accidental erasure.

Those cassettes which have green labels have not had their tabs punched out and therefore these cassettes should be retained in file.

It is recommended that, at the option of the Agency, only the following channels and cassettes should be sent out for transcription. This recommendation is based upon the volume of the recording and the frequency which it occurs based upon total listening of the cassettes within the system. Although some of the cassettes within specific numbered sequences may not have recording on them, those channels which have a continuous flow of recording should be sent out intact to maintain the numbering sequence of the cassettes.

The following are the recommendations for transcription:

- Channel 2 - The entire cassette sequence.
- Channel 4 - The entire cassette sequence.
- Channel 6 - The entire cassette sequence.
- Channel 8 - Cassettes No. 01307 and 01310.
- Channel 10 Cassettes No. 01405, 01406, 01407, 01408, 01412, 01416, 01417 and 01418
- Channel 12 The entire sequence.
- Channel 16 Cassette No. 01696, 01697, 01698, 01702, and 01709.

Note: This recommendation is based upon the review of the log sheets as attached to this report. The Agency may want to review these log sheets and make their own determinations.

SPECIAL MARKINGS

Special markings were used upon the cassettes to indicate the types of recording or on-line conditions which are not suitable for transcription. These markings are as follows:

- * - Indicates low signal indicative of cross-talk.
- T - Indicates a dial tone or mis-dial which may indicate that the Telephone Conversation was switched to a non-recorded phone line.
- D - Indicates mis-dial or dial tones only.

All conversations within the system were identified as such for transcription regardless of the nature of the conversation.

PROBABLE TRANSCRIPTION TIMES

<u>Channel/Minutes</u>	<u>Probable Lines</u>	<u>Estimated Trans. Time (Hrs.)</u>
2 652"	8150	135.83
4 251	3137.5	52.3
6 317.5	3968.75	66.15
8 6	75	1.25
10 35	437.5	7.25
12 172.25	2153	35.88
16 8.5	106	1.76

Times indicate actual on-line minutes. These have been adjusted to a rate of 12.5 recorded lines per minute including air gaps (pauses) between conversations. The above estimates have been

correlated to a transcription rate of 1 transcribed line per minute typed to adjust for conversational spacing. Therefore it is estimated that transcription time should approximate 300 hours.