

OFFICE MEMORANDUM

TO : Biomedical Control Committee

DATE: December 2, 1975

713005

FROM : J. A. Helland *alc*

SUBJECT : MINUTES OF MEETING--11/18/75

SYMBOL : MP-3

MAIL STOP: 844

HELLAND: First we'd like to get a quick review from Lundy on two projects that were discussed at a previous BCC meeting. LUNDY: On the DAA telephone connections, we've modified one modum for auto-answer, but later found the DAA terminals were disconnected--one line transformer and six resistors were left out. This problem still has not been settled with the company. E-Division will loan us a modum, but they've had trouble getting one to work also. On the button and light panel, all of the lights are working, but we still have to do a channel-by-channel check of the computer control of lights. The button part should be finished by the end of the week. KITTELL: The button interface software has been written but not checked out.

LUNDY: What's the situation with George Atkinson? HELLAND: We're working to get him here for Christmas vacation.

BARNARD: We have money budgeted for DECNET or an equivalent system. If we aren't going to do anything along these lines, I should know soon, so the money can be re-budgeted. HELLAND: Smith felt this was a low-priority item. SMITH: As a direct relation to clinical treatment I still feel it should have low priority. BARNARD: There are two different points here. I'd like to know--Are we going to spend the money for it? Is LASL going to make a corresponding expenditure to get the things needed at their end? UNM personnel can install the systems at both ends. HELLAND: I propose that the BCC encourage UNM to continue with that project. LUNDY: You might postpone the decision until after the DECUS meeting, from which we can learn more about DECNET. SMITH: Could Barnard list the items for which he'd use DECNET. BARNARD: Centralized control of patient data (this would circumvent all the hassle we had last time). Isaac Rosen is developing programs to run up here--with DECNET he could do 80% of that work down there and thereby cut down on his travel time. LUNDY: We are not CPU bound here, so some of the UNM codes (e.g., Cunningham's treatment planning codes) could be run much faster here than at UNM. HELLAND: Once we start running some of our Monte Carlo codes at Biomed, the computer will be CPU bound. LUNDY: What fraction of the time will we be running Monte Carlo programs in the next few years? HELLAND: I think we'll be running them quite extensively for the next several years. BARNARD: We have to make a decision as to whether or not we want to pursue DECNET. This is something that Kligerman is definitely interested in. HELLAND: UNM should really make the decision

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because it'll mainly be a one-way operation. BARNARD: I can envision some of Biomed's programs, e.g., Monte Carlo program, running all night at UNM. SMITH: My opinions are based on the idea that if any of our Physics-time is spent on that project, then it shouldn't be done right now, but if money is allocated and Barnard's people can take care of it, then they should go ahead with it. BARNARD: Time-wise we're talking about a minimum of three months. I don't see any need for effort from Physics people. It will need some support from Kittell, UNM programmers and myself. PACIOTTI: If UNM tapes were compatible with Biomed's tapes, I'd be against DECNET, considering how many trips are made back and forth each week. Since patient treatment records is the only legitimate basis for DECNET, UNM should decide how they want to handle it, whether by DECNET, tapes, or however. LUNDY: Sharing computer resources is very important too. PACIOTTI: Too much man power will be lost in implementing DECNET and servicing it. SMITH: I agree; talking about it sounds great, but the practicality of it may not really be that nice.

PACIOTTI: There's a correction to the minutes of the meeting of 11/10/75, which says that anything that pulls the target will close Slit 1. This isn't quite accurate, because there will be times when we'll want to pull the target without having Slit 1 close, e.g., if we are not going into the treatment room. LUNDY: I think I made that statement and that's the way the interlock system is wired. PACIOTTI: Jim Wing is looking into this problem and I think it's being changed so that Slit 1 closes whenever someone enters the treatment room. This will reduce wear and tear on Slit 1 and reduce loss of time if the target gets pulled inadvertently. Another item that should be discussed at a later meeting is the difference between personnel safety and patient safety. There are some policies that still have to be resolved. KITTELL: Will we have anything in the system that will close the Slits if the target will not pull? PACIOTTI: No, the only purpose of the slits is for the safety of personnel entering the treatment room. The way to terminate patient treatment, if the target won't pull, is to hit the SCRAM switch and shut off the accelerator. SMITH: That seems rather drastic, when we could just close the slits. PACIOTTI: The slits alone won't do it, because the background will be many r. per hour. LUNDY: If you had to, you could go in the treatment room with just the slits closed (and beam on target). PACIOTTI: No, that should be an illegal operation; there's no excuse for not turning off the accelerator under those circumstances. SMITH: Does the target system have a back-up mechanism for pulling the target? KITTELL: If a pump or line fails the target is not going to be pulled.

VANDER BEKEN: The same minutes should be corrected to reflect the fact that the software for the 840 (for a data link) does exist. The software for the HRS also exists. The work required to send the data along the lines or to write a program to request such data is very minimal for us. If Biomed needs such a data link, I'm willing to give a hand in getting it implemented. KITTELL: Yes, Nancy Spencer wrote the data-link drivers several months ago. PACIOTTI: Do you think that is a better way of sending

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patient-treatment status to CCR? SWENSON: That would depend upon whether anyone outside of Biomed does anything with those data other than look at them.

HELLAND: There are two minor corrections to the minutes of the meeting of 11/7/75. Under Item 3 it should read " \sim /r. per hour with the target out and the slits open." Item 4 should read "treatment couch". PACIOTTI: Shouldn't that lr. be lmr? HELLAND: No, that's the point Bradbury was trying to make, that with the target out and the slits open the radiation level would be \sim /4. per hr. PACIOTTI: We'll have to check that with Bradbury.

LUNDY: I'd like to comment on my statement about the data link; for the two cables that are pulled, one goes to the Harp Computer on the south side of Area A, and the other goes to the Mother-computer building near-by. What we really need is a cable to the CCR 840 computer. Since electricians are available now, we should decide if we want to splice another cable onto the Harp-computer cable and extend it to the 840. PACIOTTI: Let's take this up later when we discuss my Beam-Profile Measurements.

(VANDER BEKEN has distributed two documents on the Q Data-Acquisition Program. He made a good presentation of the Q system, and these Minutes reflect only those points not covered in the above mentioned two documents.) VANDER BEKEN: There are three buffers that the MBD can stuff data into. When a given buffer is filled, the next buffer is automatically selected. If one is operating in a non-mandatory-process mode, and events are being sent to the processor from the first buffer, as soon as the MBD starts filling the third buffer, the processing of data halts until the processor pointer reaches the second buffer, at which time processing will again commence. All events are recorded on tape, however.

HELLAND: There are four areas of work that have to be accomplished prior to tuning. (Referring to Fig. 3 of the paper by Minor, et al.) First, we have to get Q running on Version 6 of RSX. Second, we have to write the analyzer program (from line "FRONTEND SAMPLE" to line "END SAMPLE"). This is relatively trivial and is half finished already. Third, we have to write a subroutine equivalent to "SUBROUTINE SCALER", to process our data. For this we would like to use some of Ken Klare's data acquisition subroutines. Considerable work has to be done in this area yet. Fourth, we need subroutines equivalent to (CALL) "BACKGR". These subroutines, originally written by Klare for DOS, have been converted to RSX Version 6 and are running. VANDER BEKEN: I think it will take something like a month to get Q running under Version 6. HELLAND: Would you have any objections to ending up with a data-acquisition code that is a mixture of Q and Klare's code? VANDER BEKEN: It would be desirable to keep our Q System as standard as possible so we could exchange software with other computer systems. HELLAND: But we already have a powerful

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data-acquisition system, and we'd like to keep the good features of that system. I would like to suggest that, after this meeting, Vander Beken, and any other interested persons, go to the MP-3 computer and get a demonstration of the Klare code from Paciotti (on DOS) and myself (on RSX). (After the meeting Vander Beken did this.)

A discussion was carried on (mainly between Paciotti and Kittell) as to whether commands of the type BEGIN, RUN, REPLAY, etc., are better handled by Q directly (favored by Kittell and Vander Beken) or by a Klare-type main program (favored by Paciotti and Helland).

HELLAND: If there are conflicts between the MBD Code needed for Q and the Biomed MBD code, we can do the work on the MP-3 computer where any MBD code can be run. LUNDY: The Biomed MBD has larger memory to circumvent such problems. KITTELL: Dick Thomas should help with the MBD software. HELLAND: Maybe Vander Beken should look over Klare's MBD software, SLAP. VANDER BEKEN: No, I don't want to get involved with MBD programming.

PACIOTTI: Rather soon the BCC will have to get down to making some decisions. I propose that one of the first relate to my memo on "Biomed Target Control and Beam Profile Measurement". HELLAND: We'll put that on the agenda for the next meeting. LUNDY: I think the new target-controlling system (using a new magnet controller) will allow for positioning the target in any position.

VANDER BEKEN: As another item for the agenda we should review the memo from Knapp (Subject: Biomedical Control Committee) and try to make some decisions. HELLAND: That's a good point. All of us should review that memo and think about it for next time.

The question of what back-up systems (both hardware and software) are desirable was briefly discussed. The biggest problem is loss of Memory or loss of DIVA disks. VANDER BEKEN: How about a back-up MBD? LUNDY: The last time we did patient treatment we kept a spare (LEEP) MBD in the room.

The meeting was adjourned.

Distribution:

J. A. Helland, MS 844 (2)
A. Lundy, MS 809
R. Kittell, MS 809
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D. Swenson, MS 844
E. Knapp, MS 844
→ J. Bradbury, MS 844
M. Paciotti, MS 844
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