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National Laboratory

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#3 Attempt to Extract Beam from H10

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AGS STUDIES REPORT. FEB COMMISSIONING.

THURSDAY, APRIL 26, 1973. 0600-1400 HRS.

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OBJECTIVE: 3RD ATTEMPT TO EXTRACT INTO H10 TEST CHANNEL.

RESULT: NO EXTRACTION. STILL HAMPERED BY TIMING AND AMPLITUDE SHIFTS IN DATACOM SYSTEM IN E10 & H10 HOUSE.

1. BEAM AT 0900. G. COTTINGHAM AND P. WARNER SEARCHED FOR SOURCE OF NOISE SPIKE WHICH APPEARS ON GAP VOLTAGE OF ALL RF CAVITIES CONCURRENT WITH FIRING OF CIS, EIS BEAM KICKERS. CHANGING GROUNDING OF KICKERS DIDN'T HELP. PICK-UP FOUND ON CABLES FROM THE RF HOUSE TO MAIN CONTROL WHICH TRANSMIT RF AMPLITUDE SIGNALS THROUGH AN ARRAY OF DIFFERENCE AMPLIFIERS IN MCR TO RF AGC. THE NOISE SPIKE WAS APPARENTLY SO LARGE THAT DIFFERENCE AMPLIFIERS COULDN'T REJECT IT. TEMPORARY FIX WAS TO SHUNT NOISE SPIKE THROUGH CAPACITORS ADDED AT AMPLIFIER INPUT. WE NEED MORE STUDY TO FIND SOURCE OF PICK-UP.
2. AGS BEAM BACK ON AT 1200 AFTER LOSING ~2 HRS TRYING TO FIND WHERE "SWITCH 2. OFF" TRIGGER FOR RF ORIGINATES. (IT IS NOW TRIGGERED FROM SEB CONSOLE). NOTED RE-APPEARANCE OF TIMING JITTER OF CIS/EIS KICKERS. TROUBLE TRACED TO JITTER IN T_0 OF MASTER PREDET. NEXT NOTED VARIATION IN AMPLITUDE OF E10 BUMP SUPPLY AND NOTED IT INTERMITTANTLY GOES INTO DC OPERATION. TROUBLE THERE WAS A DIODE BURNED OUT IN CHARGING SUPPLY, IT WAS REPLACED. NEXT NOTED THAT E10 SEPTUM SUPPLY DOUBLE-PULSES, TRIGGERED BY CIS/EIS. CHANGED KICKER TIMING TO CORRECT THIS. NEXT NOTED FLUCTUATION IN H10 BUMP SUPPLY AMPLITUDE AND TIMING. DATACOM SYSTEM OBVIOUSLY STILL HAS TROUBLES, IN SPITE OF SATISFACTORY OPERATION ON 4/25/73 DURING PRE-STUDIES CHECK-OUT.
3. WITH E10 SEPTUM ~.1" FROM EDGE OF BUMPED BEAM WE REMOVE ~25% OF AGS BEAM. THIS IS REASONABLE FRACTION IF KICKER AMPLITUDE ~.4" AT E10 AND BEAM WIDTH ~.5".