JAMES RIVER CORPORATION
KVP GROUP
100 Island Ave., Parchment, MI 49004-1394 (616) 383-5000

February 25, 1985

Mr. Bill Reichhold
Control Number 18135
Materials Licensing Section
United States Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Reichhold:

The following information is submitted as a supplement to the James River Corporation - KVP Group license application, per our phone conversation on February 7, 1985.

Security Precautions

Currently the instruments covered by the application are kept in buildings with limited access. The gas chromatographs are located at the laboratory which is locked after working hours. After hours the laboratory is accessible only by laboratory authorized personnel. In addition to the GC units other expensive instruments are located in the laboratory, therefore one of the check in stations for the security guard is located at the laboratory. The TiO2 analyzer is located in a testing room within a manufacturing building. The testing room is in use 24 hours a day seven days a week except for holidays and rare occassions. During those times the room is locked. In addition the TiO2 analyzer will be locked in an office which is located inside the testing room (see attached map for locations).

Personnel Training

The training I received was from the former radiation officer Joseph D. Chadderdon. David Bishop (Instrument Supervisor) will be my temporary replacement whenever I am not on site. Dave received his training from the manufactures, owners manuals and Joseph D. Chadderdon.

Equipment Identification

Attached are brochures relating to the Varian Aerograph Gas Chromatorgraph and the Texas Nuclear TiO2 analyzer.

Maintenance and Repairs

Maintenance and repairs will be done by the original manufacturer or an authorized repair company.

If you have further questions please feel free to call me at 616-384-6514.

Sincerely,

Elizabeth A. Howard

Elizabeth A. Howard
Environmental Engineer

EAH/mj

Attachment

cc: K. Matveia - James River Corporation

SECTION 3
PRINCIPLES OF OPERATION

3.1 GENERAL

The ^{63}Ni Electron Capture Detector (^{63}Ni ECD) can be operated with a constant or pulsing polarizing voltage. However, there is little, if any, benifit derived from pulsing the Varian Aerograph ^{63}Ni ECD. Also, the expense for pulsing equipment far exceeds any benefits that may be obtained from the pulsing method; therefore, only the constant (DC) polarizing voltage method will be discussed in this manual.

3.2 BASIC PRINCIPLES OF OPERATION

Refer to Figure 3-1 for the following discussion of the ^{63}Ni ECD operation.

The radioactive foil (^{63}Ni) emits β particles with a maximum energy of $\approx$ 67 KeV. As the β particles travel through the carrier gas, they ionize the carrier gas (nitrogen) and produce positive ions and secondary electrons. The negative cell voltage applied to the cathode connection causes the secondary electrons (free electrons) to be driven towards the anode connection. The free electrons are collected at the anode and produce a steady background (standing) current. When a sample compound with an affinity for free electrons enters the detector, the standing current is reduced. The amount of reduction is a function of the sample concentration and the electron affinity ("capture coefficient") of the compound. The decrease in standing current is sensed by an electrometer through the anode connection. This signal is then amplified to a sufficient level to operate a potentiometer strip-chart recorder.

3.3 OPERATIONAL PARAMETERS

A complete understanding of the ^{63}Ni ECD operational parameters is necessary to properly operate the detector. The following discussion will acquaint the operator with the ^{63}Ni ECD operational characteristics.

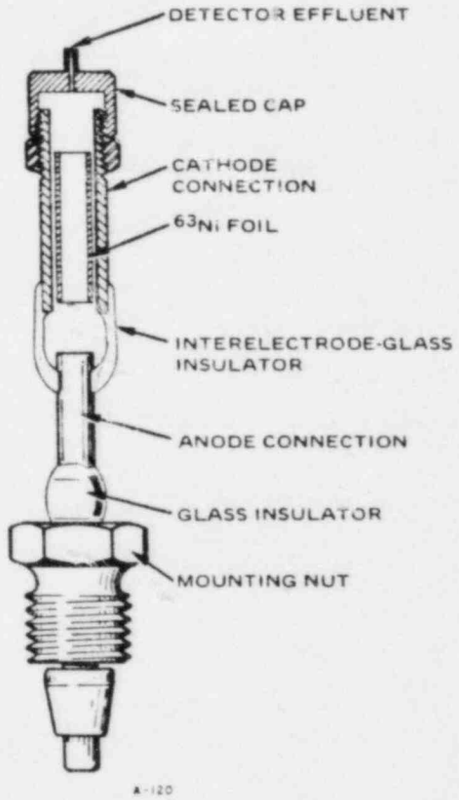


FIGURE 3-1 CROSS-SECTIONAL VIEW OF ^{63}Ni CELL ASSEMBLY

3.3.1 General

The ^{63}Ni ECD operation is dependent on the ionization of the nitrogen carrier gas by the radioactive foil β particles. This ionization (standing) current is an indication of the detector sensitivity, and is the most important parameter of the detector operation. Therefore, the operator must be aware of which parameters affect the standing current. The following paragraphs describe these parameters and how to control them for optimum detector operation.

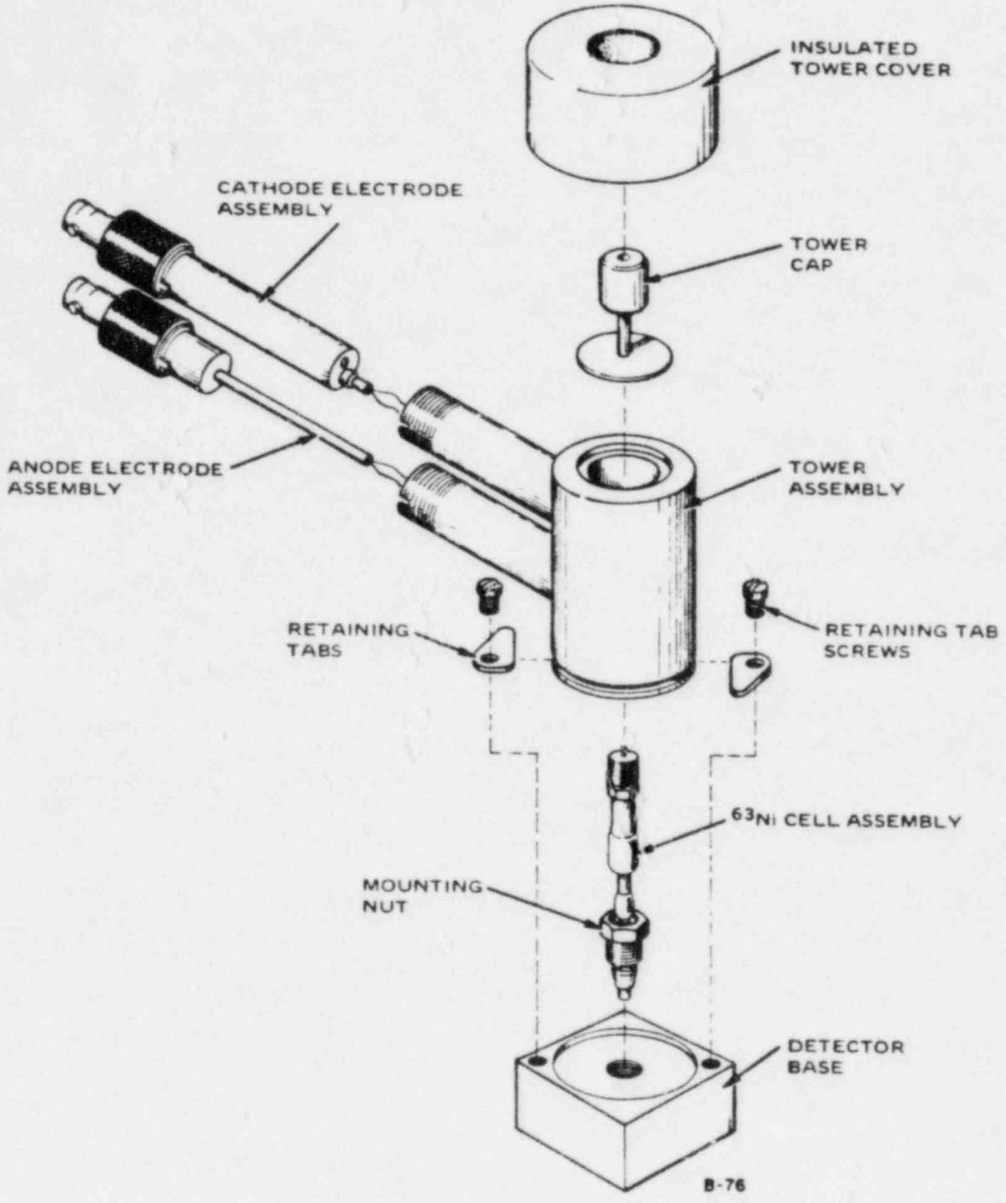
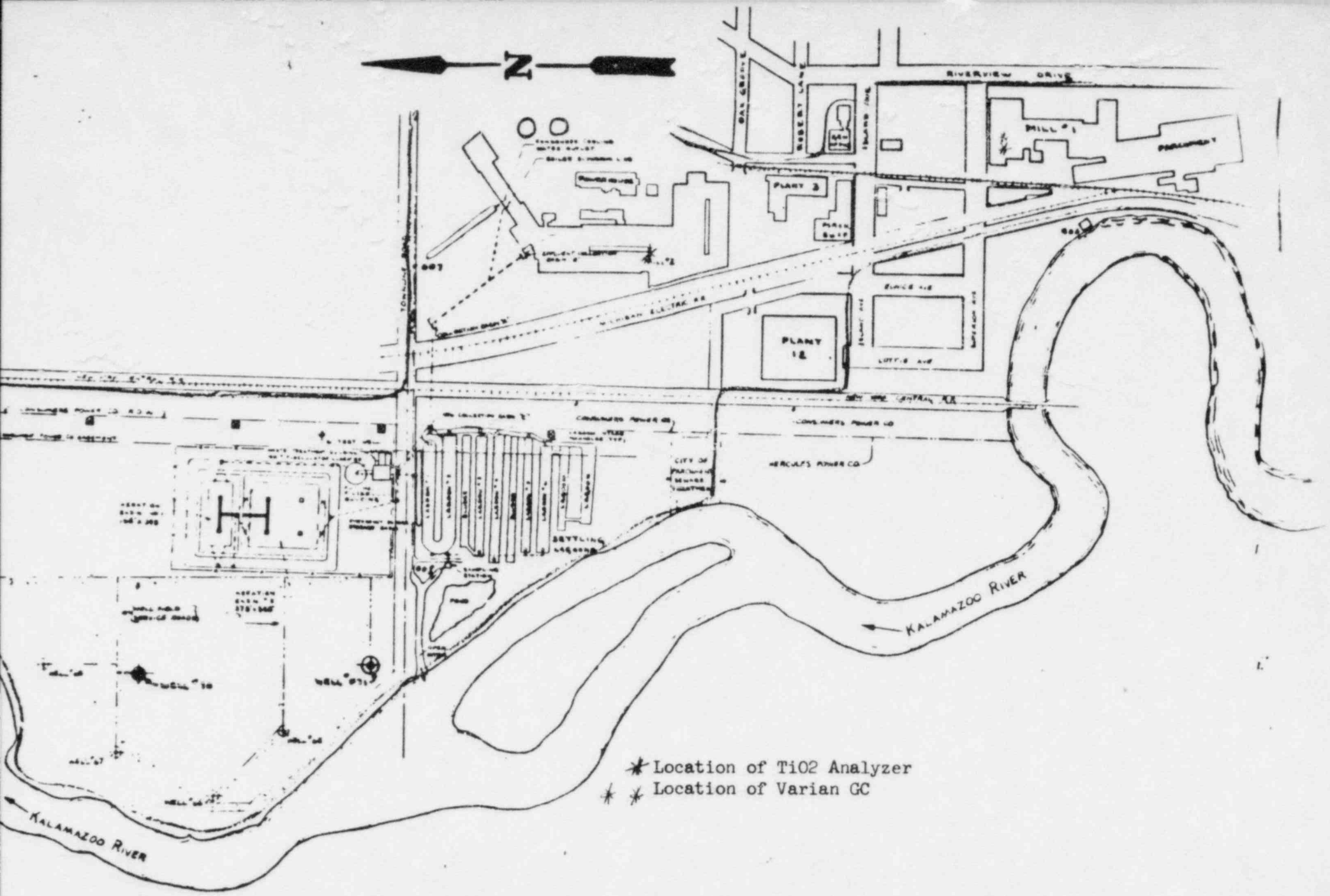


FIGURE 2-4 ^{63}Ni INSTALLATION ON 1400, 1700, 1800, 2700 AND 2800 SERIES INSTRUMENTS



3	CHANGE	BY

PLANT LAYOUT
KVP GROUP

CONVERSATION RECORD

TIME

DATE 2/7/85 AND 2/11/85

TYPE
☐ VISIT ☐ CONFERENCE ☒ TELEPHONE
☐ INCOMING ☒ OUTGOING

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO.
	JAMES RIVER CORP.	(616) 384-6514

ROUTING	
NAME/SYMBOL	INT

SUBJECT
ADDITIONAL INFORMATION FOR RENEWAL.

SUMMARY
REQUESTED THE FOLLOWING:

(1) TRAINING FOR ELIZABETH ANN HOWARD. - WHO TRAINED HER - RECOMMENDED PUTTING ADDITIONAL USER ON LICENSE.

(2) SKETCH OF NEW LOCATION - HOW WILL ACCESS TO DEVICES BE CONTROLLED.

(3) CLOSE OUT OF OLD FACILITY - (CLAIMS NEVER MOVED FACILITY JUST NEW ADDRESS) - ASK FOR PHYSICAL INVENTORY.

(4) MAINTENANCE AND REPAIR OF CELLS & DEVICES (OVER)

ACTION REQUIRED
FILE

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE
W.P. REICHHOLD	W.P. Reichhold	2/11/85

ACTION TAKEN

SIGNATURE	TITLE	DATE

(4 CONTINUED) WHO WILL SERVICE? - MANUFACTURER

(5) VENTING AND TEMP CONTROL FOR TRITIUM. - N.A. UNIT IN STORAGE.

(6) METHODS TO PREVENT UNAUTHORIZED REMOVAL OF PORTABLE X-RAY ANALYZER. — TEMPORARY JOB SITES?? - N.A.

(7) IF SOURCES IN X-RAY ANALYZER ARE EXCHANGED, THEY NEED TO SUBMIT PROCEDURES. ✓ send source - done by manufacturer. — Done by manufacturer - not removed. —
Wanted information on servicing gas chromatographs.

OTHER MILLS ↔