



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

OCT 23 1980

OCT 21 1980

50-320

MEMORANDUM FOR: Bernard Snyder, Director
Three Mile Island Program Office

FROM: Ronald L. Ballard, Chief
Environmental Engineering Branch
Division of Engineering

SUBJECT: RADIONUCLIDES IN SUSQUEHANNA RIVER BIOTA - RECEIVED FROM
PENNSYLVANIA DER

Attached for your use and for placement into the TMI-2 docket file are data compiled by the Commonwealth of Pennsylvania Department of Environmental Resources. These data pertain to actual measured levels of radionuclides in River fishes and other biota for October-December 1979, as furnished to C. Hickey by Ken Walizer of Pa. DER.

Ronald L. Ballard
Ronald L. Ballard, Chief
Environmental Engineering Branch
Division of Engineering

Attachment:
As stated

cc: D. Muller
C. Hickey

A007
S, 11

R 8010290 299

DESK MEMORANDUM

SUBJECT *Biota Sampling Results TMI
Philadelphia Academy of Natural Science*

TO *Clarence Hickey* FROM *Ken Walizer*

DATE SENT *10/15/80* DATE NEEDED

PLEASE CALL:	APPROVAL	SEE ME
RETURNED YOUR CALL	AS REQUESTED	COMMENT
<input checked="" type="checkbox"/> INFORMATION	PREPARE REPLY/REPORT	NOTE AND FILE

RECEIVED BY DATE TIME

ROUTE	INITIAL	DATE	ROUTE	INITIAL	DATE

MESSAGE

*To Clarence Hickey
Nuclear Regulatory Commission
Office F234
Washington, D.C. 20555*

*Results of Biota Sampling at
TMI Oct-Dec 1979.*

*Red. 20-3-80
CRH*

*Ken Walizer
To DER*

ENVIRONMENTAL PROTECTION AGENCY

ENVIRONMENTAL MONITORING AND SYSTEMS LABORATORY

LAS VEGAS, NEVADA

80/04/15

SUSQUEHANNA RIVER SEDIMENT AND BIOTA SAMPLE RESULTS

NOTE: "NA" INDICATES NO ANALYSIS. "ND" INDICATES NOT DETECTED. WHEN RESULTS ARE GIVEN IN EXPONENTIAL NOTATION THE NUMBER FOLLOWING THE "E" IS THE EXPONENT OF TEN BY WHICH THE PRECEDING NUMBER SHOULD BE MULTIPLIED. A VALUE IN PARENTHESES IS THE ESTIMATED TWO-SIGMA COUNTING ERROR ASSOCIATED WITH THE PRECEDING RESULT. ALL LABELED TWO-SIGMA ERROR TERMS ARE ESTIMATED TWO-SIGMA COUNTING ERRORS. ALL MINIMUM DETECTABLE VALUES INDICATED BY THE SYMBOL "C" FOR SAMPLES COLLECTED PRIOR TO JANUARY 1, 1978, ARE BASED ON A TYPE I ERROR EQUAL TO FIVE PERCENT. ALL MINIMUM DETECTABLE VALUES FOR SAMPLES COLLECTED ON OR AFTER JANUARY 1, 1978 ARE ALSO INDICATED BY "C", BUT ARE BASED ON A TYPE I ERROR EQUAL TO A TYPE II ERROR EQUAL TO FIVE PERCENT (SEE HASL-300 PROCEDURES MANUAL).

SUSQUEHANNA RIVER SEDIMENT AND BIOTA SAMPLE RESULTS

PENNSYLVANIA REPORTED 60/08/15 ANALYSTS RESULT 2SIGMA UNITS

WRIGHTSVILLE D WRIGHTSVILLE FORK K 5.7E-02 3.4E-03 G/G
 SO 0590 42 72
 215712 RIVER DATE= 79 10 21
 SIZE= 51.78 G

SAFE HARBOR E SAFE HARBOR DAM LANCASTER 137CS 4.9E-01 2.1E-01 DCI/G
 SO 0590 42 72 K 2.8E-02 5.0E-03 G/G
 215714 RIVER DATE= 79 10 21
 SIZE= 61.78 G

COLUMBIA LANCASTER, CO. 137CS 1.9E-01 1.0E-01 DCI/G
 SO 0590 42 72 K 1.6E-02 2.2E-03 G/G
 215710 RIVER DATE= 79 10 22
 SIZE= 44.95 G

BRIDGE & SOUTH OF MIDDLETOWN DAUPHIN K 3.8E-03 2.3E-03 G/G
 SO 0590 42 72
 215711 RIVER DATE= 79 10 22
 SIZE= 60.36 G

TMI A SOUTH OF MIDDLETOWN DAUPHIN 137CS 9.4E-01 2.6E-01 DCI/G
 SO 0590 42 72 K 2.2E-02 3.2E-03 G/G
 215713 RIVER DATE= 79 10 22
 SIZE= 44.12 G

COLUMBIA C COLUMBIA LANCASTER CO GAMMA-SPECTRUM=NEGLECTIBLE
 SO 1590 071 42 03 60 TYPE = CHANNEL CATFISH
 226295 RIVER DATE= 79 10 23 STATION = COLUMBIA C
 SIZE= 6.2 G

SAFE HARBOR E SAFE HARBOR DAM LANCASTER K 2.2E-02 9.0E-03 G/G
 SO 1590 071 42 03 60 STATION = SAFE HARBOR E
 226301 RIVER DATE= 79 10 23 TYPE = CHANNEL CATFISH
 SIZE= 12.7 G

SAFE HARBOR E SAFE HARBOR DAM LANCASTER K 2.5E-02 1.3E-02 G/G
 SO 1590 071 42 03 60 STATION = SAFE HARBOR E
 226305 RIVER DATE= 79 10 23 TYPE = ROCKBASS
 SIZE= 6.7 G

SAFE HARBOR E SAFE HARBOR DAM LANCASTER GAMMA-SPECTRUM=NEGLECTIBLE
 SO 1590 071 42 03 60 STATION = SAFE HARBOR E
 226306 RIVER DATE= 79 10 23 TYPE = REDBREASTSUNFISH
 SIZE= 6.2 G

TMI A SOUTH OF MIDDLETOWN DAUPHIN CO K 1.7E-02 2.5E-03 G/G
 SO 1590 043 42 03 60 TYPE = REDBREASTSUNFISH
 226288 RIVER DATE= 79 10 25 STATION = TMI A
 SIZE= 14.0 G

SUSQUEHANNA RIVER SEDIMENT AND BIOTA SAMPLE RESULTS

PAGE 002

PENNSYLVANIA REPORTED 80/08/15

-----ANALYSIS-----RESULT-----2SIGMA-----UNITS-----

TMI A SOUTH OF MIDDLETOWN DAUPHIN CO K 1.4E-02 8.6E-03 G/G
 50 1590 043 42 03 60 STATION = TMI A
 226289 RIVER DATE= 79 10 25 TYPE = ROCKBASS
 SIZE= 14.8 G

COLUMBIA C COLUMBIA LANCASTER CO K 1.4E-02 7.8E-03 G/G
 50 1590 071 42 03 60 STATION = COLUMBIA C
 226294 RIVER DATE= 79 10 25 TYPE = CARP
 SIZE= 14.5 G

COLUMBIA C COLUMBIA LANCASTER CO K 2.2E-02 7.8E-03 G/G
 50 1590 071 42 03 60 STATION = COLUMBIA C
 226296 RIVER DATE= 79 10 25 TYPE = ROCKBASS
 SIZE= 14.7 G

TMI CONTROLS GAMMA-SPECTRUM=NEGLECTABLE
 50 1590 42 60 STATION = TMI CONTROLS
 226304 RIVER DATE= 79 10 26 TYPE = CONTROL MUSSELS
 SIZE= 11.3 G

COLUMBIA C COLUMBIA LANCASTER CO GAMMA-SPECTRUM=NEGLECTABLE
 50 1590 071 42 03 60 TYPE = MUSSELS
 226297 RIVER DATE= 79 12 03 STATION = COLUMBIA C
 SIZE= 11.1 G

WRIGHTSVILLE D WRIGHTSVILLE YORK CO GAMMA-SPECTRUM=NEGLECTABLE
 50 1590 133 42 03 60 TYPE = MUSSELS
 226299 RIVER DATE= 79 12 03 STATION = WRIGHTSVILLE D
 SIZE= 12.2 G

COLUMBIA C COLUMBIA LANCASTER CO K 1.5E-02 7.8E-03 G/G
 50 1590 071 42 03 70 TYPE = FLOC
 226293 RIVER DATE= 79 12 03 STATION = COLUMBIA C
 SIZE= 15.7 G

WRIGHTSVILLE D WRIGHTSVILLE YORK CO K 2.0E-02 8.1E-03 G/G
 50 1590 133 42 03 70 TYPE = FLOC
 226298 RIVER DATE= 79 12 03 STATION = WRIGHTSVILLE D
 SIZE= 19.3 G

WRIGHTSVILLE D WRIGHTSVILLE YORK CO STATION = WRIGHTSVILLE D
 50 1590 133 42 03 70 TYPE = DIATOMS
 226300 RIVER DATE= 79 12 03 GAMMA-SPECTRUM=NEGLECTABLE
 SIZE= 2.1 G

TMI A SOUTH OF MIDDLETOWN DAUPHIN CO GAMMA-SPECTRUM=NEGLECTABLE
 50 1590 043 42 03 60 TYPE = MUSSELS
 226290 RIVER DATE= 79 12 04 STATION = TMI A
 SIZE= 11.6 G

MISSOURI RIVER SEDIMENT AND BIOTA SAMPLE RESULTS

PENNSYLVANIA REPORTED - 80/08/15 ANALYSIS RESULT 2SIGMA UNITS

SAFE HARBOR E SAFE HARBOR DAM LANCASTER 50 1590 071 42 03 60 226303 RIVER DATE= 79 12 04 SIZE= 11.5 G	K STATION = SAFE HARBOR E TYPE MUSSELS GAMMA-SPECTRUM=NEGLECTIBLE		
THIA SOUTH OF MIDDLETOWN DAUPHIN CO 50 1590 043 42 03 70 226287 RIVER DATE= 79 12 04 SIZE= 16.8 G	K STATION THIA TYPE FLOC	2.1E-02	3.3E-03 G/G
SAFE HARBOR E SAFE HARBOR DAM LANCASTER 50 1590 071 42 03 70 226300 RIVER DATE= 79 12 04 SIZE= 12.9 G	K STATION = SAFE HARBOR E TYPE FLOC GAMMA-SPECTRUM=NEGLECTIBLE	1.0E-02	9.7E-03 G/G
THIA SOUTH OF MIDDLETOWN DAUPHIN CO 50 1590 043 42 03 70 226307 RIVER DATE= 79 12 04 SIZE= 1.6 G	137CS STATION THIA TYPE DIATOMS	6.3E00	3.8E00 PCI/G
SAFE HARBOR E SAFE HARBOR DAM LANCASTER 50 1590 071 42 03 70 226310 RIVER DATE= 79 12 04 SIZE= 1.9 G	K STATION = SAFE HARBOR E TYPE DIATOMS GAMMA-SPECTRUM=NEGLECTIBLE		
BRIDGE B SOUTH OF MIDDLETOWN DAUPHIN CO 50 1590 043 42 03 60 226292 RIVER DATE= 79 12 05 SIZE= 11.6 G	K STATION BRIDGES TYPE MUSSELS GAMMA-SPECTRUM=NEGLECTIBLE		
BRIDGE B SOUTH OF MIDDLETOWN DAUPHIN CO 50 1590 043 42 03 70 226291 RIVER DATE= 79 12 05 SIZE= 21.0 G	K STATION BRIDGES TYPE FLOC	9.4E-03	5.2E-03 G/G
BRIDGE B SOUTH OF MIDDLETOWN DAUPHIN CO 50 1590 043 42 03 70 226308 RIVER DATE= 79 12 05 SIZE= 5.2 G	K STATION BRIDGES TYPE DIATOMS GAMMA-SPECTRUM=NEGLECTIBLE		
SAFE HARBOR E SAFE HARBOR DAM LANCASTER 50 1590 071 42 03 60 226302 RIVER DATE= 79 12 13 SIZE= 13.5 G	K STATION = SAFE HARBOR E TYPE CARP GAMMA-SPECTRUM=NEGLECTIBLE	1.4E-02	7.2E-03 G/G