STAFF RECOMMENDATION

THAT COMMISSION APPROVE THE CONTROLLED PURGE ALTERNATIVE FOR DECONTAMINATING TMI-2 REACTOR BUILDING ATMOSPHERE BY NO LATER THAN JUNE 13, 1980. FOLLOWING INITIAL PURGE, STAFF REQUESTS APPROVAL TO SUBSEQUENTLY USE FAST PURGE SYSTEM TO TAKE ADVANTAGE OF FAVORABLE METEOROLOGY.

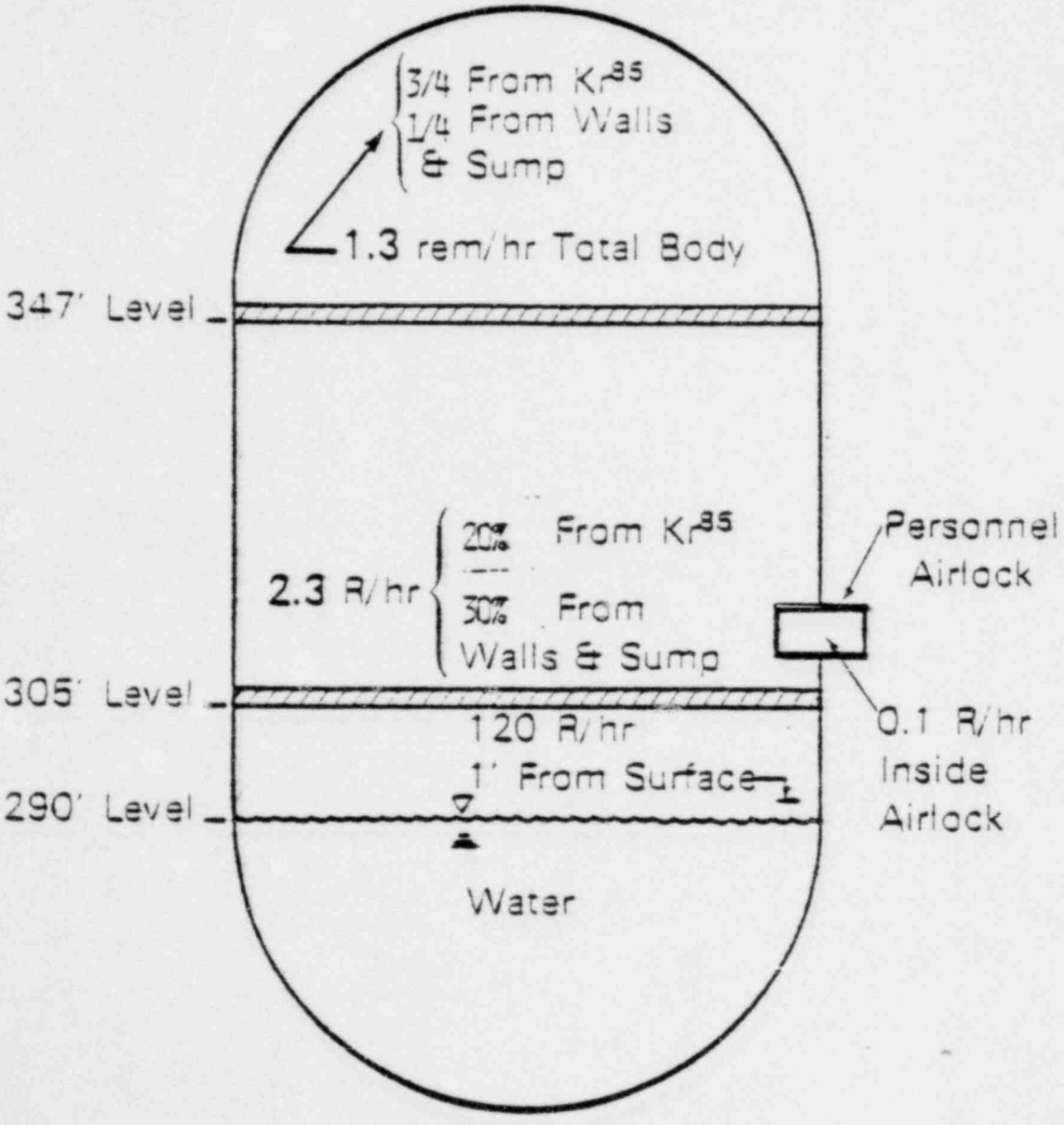
ALL RELEASES TO BE CONTROLLED WITHIN EXISTING PLANT TECHNICAL SPECIFICATIONS.

BASES FOR RECOMMENDATION

- REACTOR BUILDING ATMOSPHERE NEEDS TO BE CLEANED UP SAFELY AND PROMPTLY
- PUBLIC HEALTH AND ENVIRONMENTAL IMPACTS OF ANY ALTERNATIVE EXAMINED ARE NEGLIGIBLE
- THE SLOW, CONTROLLED METHOD IS AVAILABLE NOW
- PSYCHOLOGICAL IMPACTS MAY INCREASE WITH FURTHER DELAYS IN INITIATING CLEANUP OF THE REACTOR BUILDING
- CONTROLLED PURGING IS THE QUICKEST AND SAFEST FOR THE WORKERS AT TMI

ESTIMATED GAMMA DOSE RATES INSIDE REACTOR BUILDING

(Kr-85 Beta Dose To Bare Skin is 150 rad/hr)



COMMENTS RECEIVED

500 - OPPOSED CONTROLLED PURGE

195 - GENERALLY SUPPORTED CONTROLLED PURGE

105 - NO POSITION OR RECOMMENDED ALTERNATIVE

800 TOTAL (APPROXIMATELY)

ALL SUBSTANTIVE COMMENTS TO BE PUBLISHED AS VOLLUME 2 TO NUREG-0662 AND MADE PUBLICALLY AVAILABLE

NRC STAFF CONCLUSION:

CONTROLLED PURGING IS THE PREFERRED ALTERNATIVE TO MINIMIZE LONG-TERM PSYCHOLOGICAL STRESS.

NRC STAFF CONCLUSION:

CONTROLLED PURGING WILL HAVE NO PHYSICAL HEALTH EFFECTS

INDEPENDENTLY ASSESSED BY A NUMBER OF GROUPS, REACHING SIMILAR CONCLUSIONS

- NCRP
- EPA
- HEW
- UCS
- NRDC

SLOW PURGE OPTION

MAX. INDIVIDUAL DOSE	LOCATION	METEOROLOGICAL DISPERSION
0.2 MREM TOTAL BODY	600 M WNW	6.7×10^{-6} SEC/M^3
11 MREM SKIN	(CLOSEST SHORE OF SHELLEY ISL.)	(ANNUAL AVERAGE)

50 MILE POPULATION DOSE - 0.76 PERSON-REM TOTAL BODY
63 PERSON-REM SKIN

AVERAGE 50 MILE INDIVIDUAL DOSE (2.2 MILLION PEOPLE) - 3.5×10^{-4} MREM TOTAL BODY
2.5×10^{-2} MREM SKIN

SUMMARY OF AGE SPECIFIC CANCER MORTALITY RISK ESTIMATORS

Age Group	Potential Cancer Mortality per 10^6 Person-Rem*	Totals
In-Utero	150 Leukemias 150 All others	300
0-0.99 years	50 Leukemias 43 All others	93
1-10 years	50 Leukemias 55 All others	105
11-20 years	25 Leukemias 171 All others	196
20-70 years	23 Leukemias 108 All others	131
All ages	28 Leukemias 1 Skin 106 All others	135

*For a population composed only of that age group,

0.76 person-rem total body ⟶ 0.0001 fatal cancers

63 person-rem skin ⟶ 0.00006 fatal cancers

NEED FOR DECONTAMINATION OF THE REACTOR BUILDING ATMOSPHERE

- PERMIT LESS RESTRICTED AND PROLONGED ACCESS
  - GATHER INFORMATION
  - MAINTAIN EQUIPMENT (E.G., AIR COOLERS, NEUTRON MONITORS)
  - DETAILED RADIATION MAPPING
  - LOCAL SHIELDING PLACEMENT
  - PRELIMINARY DECONTAMINATION WORK
  - ASSIST WATER PROCESSING WITH AREA WASH DOWNS
  - PROCEED TOWARD TOTAL DECONTAMINATION OF FACILITY, INCLUDING DEFUELING

Need For Decontamination (con't)

- Preclude future, uncontrolled leakage (no health effect, but causes anxiety in area)

- Prompt decontamination of atmosphere should help reduce long-term psychological stress by making a positive move toward cleanup of TMI-2 and shortening overall time for cleanup

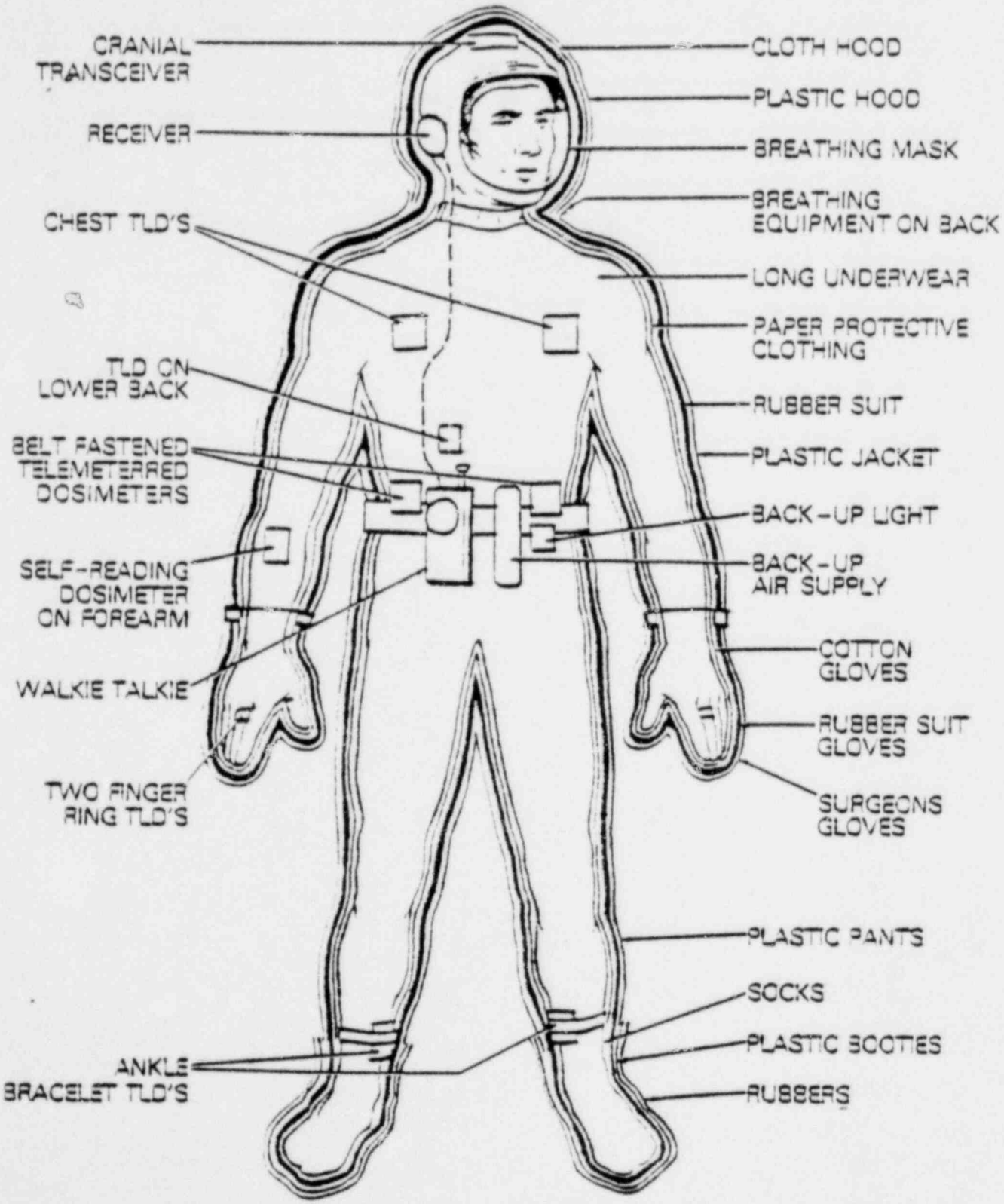
Need For Decontamination (con't)

- Presence of Kr-85 limits entry to only 15-30 minutes; only preliminary radiation surveys possible

- Reduces risks to workers
  - Reduces total body gamma doses by 75% at upper level, 30% at lower level
  - Reduces risk of falling or tearing suit which could result in beta exposure

PROTECTIVE CLOTHING AND EQUIPMENT

(APPROXIMATELY 85 POUNDS)



ALTERNATIVES CONSIDERED

- Do Nothing *
- Controlled Purge
  - Slow - 160 ft. stack
  - Fast - 160 ft. stack
  - Elevated releases
    - 250 ft. stack, heated effluent *
    - 400 ft. stack *
    - 1000 ft. stack *
    - 2000 ft. tethered balloon *
- Selective Absorption
- Cryogenic
- Charcoal Adsorption
- Gas Compression
- Combination process/purge *

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* Evaluated for first time in Final EA

AGENCIES AND ORGANIZATIONS MONITORING RELEASES

- Commonwealth of Pennsylvania
- Nuclear Regulatory Commission (NRC)
- Environmental Protection Agency (EPA)
- Department of Energy (DOE)
- Metropolitan Edison Company