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WE ARE DEEPLY CONCERNED ABOUT A PROPOSED REVISION OF 10 CFR PART 50 ESTABLISHING POWER REACTOR SITE CRITERIA, AS PROPOSED IN A DRAFT OF THIS REVISION DATED SEPTEMBER 20, 1960. IN OUR OPINION THE PROPOSED PUBLICATION AND IMPLEMENTATION OF THIS DRAFT WOULD SERIOUSLY IMPAIR THE COMMISSION"S OVERALL POWER REACTOR PROGRAM AND SUBJECT THE COMMISSION TO EXCESSIVE AND JUSTIFIABLE CRITICISM FROM THE PRIVATE NUCLEAR POWER INDUSTRY AS WELL.

WE AGREE THAT REACTOR SITE CRITERIAL ARE URGENTLY NEEDED TO CLARIFY THE UNCERTAINTY NOW EXISTING IN THE COMMISSION"S REACTOR HAZARDS REQUIREMENTS. HOWEVER, WE DO NOT BELIEVE THAT THE MATERIAL PROPOSED FOR INCLUSION IN THE FEDERAL REGISTER WOULD IMPROVE THIS SITUATION. RATHER THAN PROVIDING GUIDANCE FOR THE FUTURE, IT PROPOSES TO FREEZE THE TECHNOLOGY OF ANALYSIS WHICH IS CONTINUALLY BEING MODIFIED BY NEW EXPERIMENTAL RESULTS. AS INDICATED IN THE DRAFT, THE ESTABLISHMENT OF SITE CRITERIA INVOLVES TWO MAJOR CONSIDERATIONS. THESE ARE /1/ THE ESTABLISHMENT OF ACCEPTABLE DOSE CRITERIAL WHICH APPEAR URGENTLY NEEDED AND APPROPRIATE FOR FORMAL ADOPTION BY INCLUSION IN THE FEDERAL REGISTER, AND /2/ DEFINITION OF RESTRICTIONS IMPOSED ON THE POSTULATION AND ANALYSIS OF A MAXIMUM CREDIBLE ACCIDENT WITHIN WHICH THE TECHNICAL JUDGMENT OF THE REACTOR DESIGNER MAY BE EXERCISED. THE LATTER ITEM

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SHOULD NOT BE FIXED AS PART OF THE COMMISSION"S REGULATOR PROCEDURE.

FURTHERMORE, FROM A TECHNICAL STANDPOINT WE WISH TO QUESTION /1/ THE APPROPRIATENESS OF THE PROPOSED DOSE CRITERIAL AS SUCH AND /2/ THE APPROPRIATENESS OF THE ARBITRARY RESTRICTIONS IMPOSED UPON THE ANALYSIS.

A MORE DETAILED EXPLANATION OF OUR COMMENTS IS GIVEN BELOW. PARAGRAPHS 1/B/ /C/ /D/ /E/ ARE APPARENTLY INTENDED TO PERMIT THE COMMISSION TO APPROVE SITING NOT MEETING THE CRITERIA AND TO DISAPPROVE SITING MEETING THE CRITERIA. ACCORDINGLY, THE EFFECTIVENESS OF THE MATERIAL AS A REGULATION IS NOT CLEAR. ON THE OTHER HAND THE DETAILED PRESENTATION WHICH FOLLOWS IS OF SUCH A NATURE THAT THE COMMISSION"S ABILITY TO DEVIATE FROM THAT PRESENTATION WITHOUT BEING SUBJECT TO INTERVENTION OF THE PART OF OTHERS, CONSEQUENT DELAY, AND THE NEED FOR INVOLVED JUSTIFICATION TO SUPPORT SUCH DESIRED DEVIATIONS RAISES QUESTIONS AS TO WHETHER THE FLEXIBILITY INTENDED TO BE GAINED BY THESE PARAGRAPHS CAN IN FACT BE ACHIEVED. THIS WOULD NOT BE AS SERIOUS AS WE BELIEVE IT TO BE WERE THE CRITERIA DEVELOPED ON A LESS RESTRICTIVE AND MORE REALISTIC BASIS WHICH COMPLETELY REFLECTS TECHNICALLY SUPPORTABLE ELEMENTS OF DOSE REDUCTION. INDUSTRIAL COMMENTS ON THE PREVIOUS FEDERAL REGISTER SUBMISSION STRESSED THE TECHNICAL INABILITY OF HAZARDS EXPERTS TO ARRIVE AT THE PRESENT TIME AT A SATISFACTORY STATEMENT OF SITE CRITERIA NOT SUBJECT TO CONTROVERSY AND TO THE NEED FOR MODIFICATION WITH TIME. WE AGREE WITH THIS REASONING AND RECOMMEND THAT THE APPROACH PRESENTLY EMPLOYED BY HEB AND ACRS BE PUBLISHED BY THE COMMISSION IN THE FORM OF TECHNICAL REPORTS OR OTHER GUIDANCE DOCUMENTS AND NOT BE

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FORMALIZED AT THIS TIME INTO A REGULATORY DOCUMENT.

THE MOST RECENT PREVIOUS DRAFT OF SITE CRITERIA EMPLOYED FISSION PRODUCT RELEASE ESTIMATES AND EXPOSURE CRITERIA TO THE POPULATION WHICH DIFFER FROM THE PRESENT BY FACOTRS OF TWO AND THREE. NEVERTHELESS THE NECESSARY DISTANCES FOR EXCLUSION, EVACUATION, AND DISTANCE FROM POPULATION CENTERS ARE ALMOST IDENTICALLY THE SAME IN THE PRESENT CALCULATION AS IN THE PREVIOUS. THIS SUGGESTS THAT THE DOSE CRITERIA AS SUCH ARE NOT TRUE CRITERIA AND CANNOT BE SEPARATED FROM THE STATED METHOD OF CALCULATION OF HAZARD. IT APPEARS THAT THE CALCULATION HAS BEEN PRE-FORMED SO AS TO PRODUCE A DESIRED END RESULT WHICH MAY HAVE BEEN DETERMINED BY STILL OTHER METHODS WHICH ARE NOT REVEALED. WE DO NOT BELIEVE THIS TO BE A DESIRABLE MEANS OF PROMULGATING EITHER DOSE CRITERIA OR REACTOR SITING CRITERIA.

REFERENCING PARAGRAPH 1 /G/ IT IS SPECIFIED WITHIN THE TECHNICAL CALCULATIONS THAT THE MAXIMUM DESIGNED LEAK RATE OF THE CONTAINMENT VESSEL SHALL BE EMPLOYED THROUGHOUT THE EFFECTIVE LIFE OF THE ACCIDENT WHICH IS STATED TO BE THE IODINE ACTIVITIES LIFETIME. THIS REQUIREMENT IGNORES BOTH INHERENT AND ENGINEERED MEANS WHEREBY THE CONTAINMENT PRESSURE WILL BE REDUCED WITH TIME AND IS BOTH TECHNICALLY INAPPROPRIATE AND EXCESSIVELY CONSERVATIVE.

REFERENCING PARAGRAPH 1 /H/ A SPECIFIED FORM OF THE SUTTON DIFFUSION EQUATION IS GIVEN. THIS RESTRICTION IGNORES CONSIDERABLE WORK ON EDDY DIFFUSION WHICH HAS LED TO A MODIFIED FORM OF THE EQUATION BASED ON EXPERIMENTAL EVIDENCE WHICH GIVES LOWER CALCULATED DOSE WITH DISTANCE THAN THE SPECIFIED FORM. FURTHER, THE SPECIFIED EQUATION DOES NOT ALLOW FOR APPLICATION OF EITHER THE EFFECTS OF WIND VARIABILITY WHICH ARE ALSO BASED UPON EXPERIMENTAL EVIDENCE OR THE DIFFERENCE IN PEAK TO

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AVERAGE DOSES AS A RESULT OF IMMERSION IN A CLOUD. THE STATED FORMULA CALCULATES ONLY THE CENTER LINE DOSE WHICH IS AT LEAST A FACTOR OF TWO HIGHER THAN THE AVERAGE DOSE ACTUALLY RECEIVED. ONCE AGAIN THE RESTRICTIV FORM OF THE CALCULATION IS EXCESSIVELY CONSERVATIVE AND IGNORES EXPERIMENTAL DATA WHICH COULD PERMIT MORE REALISTIC ANALYSIS.

REFERENCING PARAGRAPH 1 /I/ THE VALUES TO BE EMPLOYED IN THE ABOVE SUTTON EQUATION ARE SPECIFIED. THE RESULTING PRODUCT OF THE LATERAL AND VERTICAL DIFFUSION COEFFICIENTS IS MORE CONSERVATIVE THAN THAT ALLOWED BY PREVIOUS HEB ANALYSES WHICH RECOGNIZED CONDITIONS UNDER WHICH THE TOPOGRAPHY OF A SITE COULD PERMIT MORE FAVORABLE VALUES WHICH WOULD LOWER RESULTING DOES BY AS MUCH AS A FACTOR OF THREE.

REFERENCE 1 /A/ /II/ AND /III/ THE CALCULATIONS WHICH FOLLOW ARE BASED UPON PERSISTENT INVERSION CONDITIONS. NO GUIDANCE IS GIVEN NOR IS IT IMPLIED THAT IT IS PERMISSIBLE TO RECOGNIZE THAT THE WIND DOES NOT NECESSARILY OR EVEN USUALLY BLOW IN THE SAME DIRECTION CONTINUOUSLY FOR THE LIFETIME OF THE ACCIDENT OR THAT INVERSION CONDITIONS DO NOT NORMALLY PERSIST OVER THE FULL LENGTH OF THE DAY IN MOST AREAS OF THE UNITED STATES. UNLESS THESE CONSIDERATIONS ARE RECOGNIZED THE CALCULATED DOSES AGAIN BECOME EXCESSIVE AND NONREALISTIC.

REFERENCING PARAGRAPH 1 /J/ CONVERSION FACTORS FOR DEVELOPING IODINE DOES FROM THEIR CALCULATED CONCENTRATIONS ARE GIVEN. THE CALCULATION OF DIRECT RADIATION FROM THE CLOUD ITSELF IS OMITTED ALTHOUGH THIS ELEMENT APPEARS IN THE DOSE CRITERIA. FROM THIS STANDPOINT THE DETAILED PRESENTATION OF THE CALCULATION METHODS TO BE FOLLOWED IS INADEQUATE.

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THE PUBLIC RELATIONS ASPECT OF DEFINING AN "EVACUATION AREA" AS SUCH IS ALSO A SERIOUS MATTER WHICH WOULD APPEAR TO ENCOURAGE INTERVENTION ON THE PART OF INDIVIDUALS WITHIN SUCH AN AREA WHETHER JUSTIFIABLE OR NOT.

THE ABOVE CONSIDERATIONS, IN ADDITION TO OTHER ITEMS WHICH COULD BE DISCUSSED, INDICATE CLEARLY THE DIFFICULTY AND THE INAPPROPRIATENESS OF ATTEMPTING TO FREEZE THE HAZARDS ANALYSIS TECHNOLOGY AT THIS POINT IN TIME IN A REGULATORY DOCUMENT. THIS ACTION WOULD ALSO TEND TO REPLACE MEANINGFUL ANALYSIS BY REACTOR DESIGNERS WITH THIS MECHANICAL CRUTCH AND INHIBIT THE STUDY OR PROPOSAL OF NEW ENGINEERING SOLUTIONS TO HAZARDS PROBLEMS.

IT IS CLEAR THAT BOTH THE COMMISSION STAFF AND INDUSTRY NEED GUIDANCE. SUCH GUIDANCE SHOULD NOT BE BASED UPON ARBITRARILY INTERLOCKED DOSE CRITERIA AND CALCULATIONAL SCHEMES NOR SHOULD THESE CONSTRUCTIONS BE FIXED AS LAW AT THIS POINT. THE NECESSARY GUIDANCE CAN BE FURNISHED BY MORE FLEXIBLE MECHANISMS WHICH CAN BE DESCRIBED AS REPRESENTATIVE OF CURRENT COMMISSION APPROACHES SO THAT ANY LEGAL REQUIREMENTS FOR EXTREME CONSERVATISM CAN BE AVOIDED AND A MORE REALISTIC, MEANINGFUL AND HELPFUL APPROACH TO ANALYSIS CAN BE PRESENTED.

WE UNDERSTAND FURTHER THAT THE PRESENT ANALYSIS WOULD RAISE QUESTIONS AS TO THE SUITABILITY OF PROCEEDING WITH A NUMBER OF EXISTING COMMISSION PROJECTS. ALTHOUGH THESE MIGHT BE JUSTIFIED ON THE BASIS OF FEATURES WHICH ALLOW DEVIATION FROM THE RIGID ANALYSIS, THE PROGRAM COMPLICATIONS IN MEETING THE CRITICISM WHICH IS INHERENT IN SUCH ACTIONS AGAIN DICTATES AGAINST FORMALIZED USE OF THE CALCULATON IN THE FEDERAL REGISTER. SEVERAL OF THE DEVIATIONS FROM THE ANALYSIS IN SUPPORT OF LOWER DOSES NOT RECOGNIZED BY THE PRESENT CALCULATIONAL SCHEME HAVE FURTHERMORE BEEN SPECIFICALLY SUPPORTED, DEFENDED AND APPROVED BY DLR

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STAFF IN PUBLIC HEARINGS BEFORE THE HEARING EXAMINER ON REACTOR PROJECTS NOW UNDER CONSTRUCTION.

IN SUMMARY, WE SUPPORT THE NEED FOR SITE CRITERIA GUIDANCE BUT STRONGLY RECOMMEND AGAINST THIS MECHANISM FOR ESTABLISHING AN APPROACH, AT THIS TIME, TO SITE SAFETY. SUCH AN ACTION WILL, IN OUR OPINION, HAVE SERIOUS CONSEQUENCES ON EXISTING OR AUTHORIZED CONSTRUCTION PROJECTS AND THE ORDERLY DEVELOPMENT OF THE COMMISSION"S CIVILIAN POWER PROGRAM REF OE RGL TWX NR

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