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TO USAEC WASHDC

FROM S R SAPIRIE, MANAGER, OAKRIDGE OPERATIONS FOR E J BLOCH.

INFO - F K PITTMAN, P W MCDANIEL, P C AEBERSOLD, AND C L DUNHAM.

REUTT AEC 444 DATED AUGUST 12, 1959, SYMBOL PO-EFM. WE HAVE REVIEWED THE ORNL PROGRAM IN TERMS OF THE LISTING IN THE ORNL CF 59-5-20 /FORM 189 COMPILATION/ WITH THE ORNL LABORATORY DIRECTOR. THESE PROGRAMS ARE UNDER CONTINUING REVIEW BY THE LABORATORY MANAGEMENT, ORO AND THE HEADQUARTERS PROGRAM DIVISIONS. HENCE, ONLY THE MORE PROMISING PROGRAMS ARE UNDERTAKEN. NO GUIDANCE WAS GIVEN ON THE DEFINITION "SLOUGH OFF." HENCE, WE TOOK THE APPROACH THAT THIS WOULD ELIMINATE ANY PROGRAM WHICH DID NOT MEET ONE OR MORE OF THE FOLLOWING CRITERIA CLN /1/ THE PROGRAM IS OF PRIMARY INTEREST TO THE COMMISSION SMCLN THAT IS, ORNL HAS BEEN DIRECTED TO UNDERTAKE THE PROGRAM AND ESSENTIAL OR UNIQUE FACILITIES, SKILLS, AND SUPPORT ARE AVAILABLE OR PLANNED, AND /2/ THE PROGRAM IS OF VALUE TO THE COMMISSION'S BASIC RESEARCH PROGRAM AND IS PERFORMED AT ORNL BECAUSE OF THE EXISTENCE OF ESSENTIAL SUPPORTING FACILITIES OR IS UNDERTAKEN BECAUSE OF THE EXISTENCE OF ESSENTIAL SUPPORT SKILLS.

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THE ENTIRE 2000 PROCESS DEVELOPMENT PROGRAM IS CONSIDERED UNDER CRITERION ONE. NO WORK IS DONE WHICH DOES NOT UTILIZE FOR EITHER DEVELOPMENT OR TESTING THE EXISTING OR PLANNED HIGH RADIATION LEVEL FACILITIES. IN LINE INSTRUMENTATION INVOLVES
END OF PAGE ONE

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PAGE TWO

SELECTION OF THE BEST TYPE OF INSTRUMENTATION FOR "ON THE LINE"
TESTING.

THE 3000 PROGRAM, WHICH IS SMALL, CONTAINS ONLY PROGRAMS REQUESTED
BY HEADQUARTERS. ORNL INITIATES NO PROPOSALS UNDER 3000.

THE 4000 PROGRAM IS ESSENTIALLY ALL UNDER CRITERION ONE.

THERE ARE A FEW PROGRAMS UNDER 5000 AND 6000 WHICH COME UNDER
CRITERION TWO. THESE INCLUDE THE WORK OF SOME SENIOR INVESTIGATORS.
ELIMINATION OF THIS WORK WOULD INVOLVE THE LOSS OF ACKNOWLEDGED
LEADING INVESTIGATORS IN THE FIELD, WITH THE ATTENDANT LOSS OF
THEIR SKILLS AND ADVICE TO PROGRAMS OF PRIMARY INTEREST. THESE PROGRAMS
ARE CARRIED OUT BECAUSE OF THE NECESSITY OF KNOWING MORE ABOUT PHYSICAL
AND CHEMICAL PROPERTIES OF MATTER THAN THE IMMEDIATE APPLICATION
APPEARS TO REQUIRE. HOWEVER, OUR EXPERIENCE WITH THESE PROGRAMS I
INDICATES THAT THE MORE WE KNOW ABOUT THE NATURAL ENVIRONMENT THE LESS
DIFFICULTY IT IS TO UNDERSTAND RADIATION EFFECTS. NONE OF THESE PROGRAMS
CAN BE "SLOUGHED OFF" TO UNIVERSITIES WITHOUT TRANSFER OF PERSONNEL
AND SUPPORT IN TERMS OF SUPPORTING SKILLS AND FACILITIES. AN EXAMPLE
OF THIS ARE PORTIONS OF THE THREE-PART PROGRAM ON CHEMICAL PHYSICS
/MOLECULAR BEAMS, NEUTRON DIFFRACTION, AND MICROWAVE AND RADIO-
FREQUENCY SPECTROSCOPY/ CARRIED OUT BY ELLISON TAYLOR, HEAD OF THE
CHEMISTRY DIVISION, RALPH LIVINGSTON, AND H A LEVY. PARTS OF THE BASIC
STUDIES ARE IN BIOLOGY, SUCH AS SOME WORK ON NUCLEIC ACID CHEMISTRY
AND CELL GROWTH AND REPRODUCTION, AND IN METALLURGY AND SOLID STATES
STUDIES, SUCH AS PARTS OF MICROSTRAINS IN CRYSTALLS, FUNDAMENTAL
PHYSICO-METALLURGICAL RESEARCH, HIGH TEMPERATURE REACTIONS, AND
CRYSTAL PHYSICS OF CERAMICS.

IN GENERAL, WE BELIEVE THAT THE SUM TOTAL COSTS OF THESE PROGRAMS,
END PAGE TWO

0014798

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PAGE THREE

OF WHICH ONLY PARTS GO BEYOND THE PROGRAMS OF PRIMARY INTEREST, AMOUNTS TO TWO PERCENT OF TOTAL 5000 AND 6000 PROGRAMS. WE BELIEVE THAT ER CANNOT AFFORD TO DO LESS THAN THIS AMOUNT IN BASIC WORK OF THIS TYPE AND YET MAINTAIN A SATISFACTORY RATE OF PROGRAM IN THE PROGRAMS OF PRIMARY INTEREST.

IT IS OF INTEREST TO NOTE THAT THE LABORATORY PLANS IN FY 1960 TO UNDERTAKE SUBCONTRACTING IN THE AMOUNT OF \$323,000 IN BASIC PHYSICAL SCIENCE RESEARCH TO SUCH INSTITUTIONS AS CHICAGO MIDWAY LABORATORY, UNIVERSITY OF ILLINOIS, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, AND UNIVERSITY OF TENNESSEE.

WE SUGGEST THAT, IF THE SCOPE OF THE WORK CARRIED OUT IN THE NATIONAL LABORATORIES MUST BE CURTAILED, ANY CURTAILMENT TAKE THE FORM OF A BUDGET CUT SPECIFIED ONLY TO THE EXTENT OF A BROAD PROGRAM CUT, THAT IS, 2000, 4000, 5000, ETC., LEAVING THE DETAILS OF WHERE SUCH A CUT BE APPLIED TO THE DISCRETION OF LABORATORY MANAGEMENT.

WE HAVE PERFORMED A SPARATE DETAILED REVIEW OF THE ORINS PROGRAM BASED ON THEIR 189'S. ORINS IS AN ORGANIZATION MADE UP OF 37 UNIVERSITIES EACH UNIVERSITY PROVIDES ONE MEMBER ON A "COUNCIL," WHICH IS THE OVER-ALL POLICY MAKING AUTHORITY. THE COUNCIL SELECTS A "BOARD OF DIRECTORS" OF 15 MEMBERS. MEMBERS OF THE BOARD DO NOT HAVE TO BE ASSOCIATED WITH THE 37 UNIVERSITIES. THE OPERATING ORGANIZATION CONSISTS OF AN EXECUTIVE DIRECTOR. APPOINTED BY THE BOARD, AND A STAFF WORKING AT OAK RIDGE. THE STAFF CONSISTS OF FOUR OPERATING DIVISIONS /UNIVERSITY RELATIONS, SPECIAL TRAINING, MEDICAL, AND MUSEUM/ AND THE USUAL ADMINISTRATIVE OR STAFF GROUPS.

THE UNIVERSITY RELATIONS DIVISION ADMINISTERS ALL OF THE SPECIAL FELLOWSHIP PROGRAMS /NUCLEAR ENERGY TECHNOLOGY, INDUSTRIAL HYGIENE

END PAGE THREE

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PAGE FOUR

AND HEALTH PHYSICS, AND OAK RIDGE GRADUATE FELLOWSHIPS/ ASSIGNED BY THE COMMISSION. IN ADDITION, IT ADMINISTERS A SUBCONTRACT WITH THE UNIVERSITY OF TENNESSEE, WHICH PROVIDES FACILITIES AND OUT-OF-POCKET INSTRUCTOR COSTS /DIFFERENCE BETWEEN BASE SALARY OF INSTRUCTOR AND MONIES RECEIVED FROM TUITION/ SMCLN PROVIDES A REGULAR GRADUATE SCHOOL AT OAK RIDGE FOR RESIDENT EMPLOYEES OF AEC AND ITS CONTRACTORS CLN AND ARRANGES FOR UNIVERSITY PROFESSORS TO PARTICIPATE IN THE COMMISSION RESEARCH PROGRAMS AT OAK RIDGE. THE CONTRACTOR WITH WHOME THE PARTICIPANT WORKS BUDGETS AND PAY THE SALARIES. THE DIVISION ALSO ARRANGES WITH UNVIERSITIES FOR OAK RIDGE SCIENTISTS TO GIVE SPECIAL LECTURES AND SYMPOSIA AT UNIVERSITIES.

THE MEDICAL DIVISION OPERATES A CANCER RESEARCH PROGRAM. THE FACILITIES CONSIST OF LABORATORIES AND A NOMINAL TWENTY-BED HOSPITAL.

THE SPECIAL TRAINING DIVISION CONDUCTS 5 TO 6 BASIC COURSES PER YEAR ON THE USE OF RADIOISOTOPES IN RESEARCH AND 2 COURSES IN THE INDUSTRIAL USES OF ISOTOPES, IN ADDITION TO OCCASIONAL ADVANCED COURSES IN THE RESEARCH USES OF ISOTOPES IN A PARTICULAR FIELD.

THE MUSEUM DIVISION OPERATES THE AMERICAN MUSEUM OF ATOMIC ENERGY AND THE TRAVELING EXHIBITS PROGRAM. THE MUSEUM PROVIDES AN EXHIBIT AT OAK RIDGE TO RELIEVE PRESSURE TO VISIT THE PLANTS AND ALSO TO PROVIDE FOR THE PUBLIC EDUCATION AT A POINT AND TIME WHERE THE VISITING PUBLIC HAS ITS INTEREST CENTERED ON ATOMIC ENERGY. IN ADDITION, THE MUSEUM PROVIDES A BASE OF OPERATION FOR TRAINING EXHIBITS MANAGERS, REFURBISHING EXHIBITS, AND MANAGING THE NATIONAL EXHIBITS PROGRAM.

ALL OF THES PROGRAMS ARE OF DIRECT INTEREST OF THE COMMISSION.
END OF PAGE FOUR

PAGE FIVE

THE SPECIAL TRAINING DIVISION PROGRAMS HAVE BEEN REVIEWED IN DETAIL. AT PRESENT THE NUMBER OF APPLICANTS ON HAND FOR THE BASIC COURSE IS ADEQUATE TO FILL THE PLANNED COURSES FOR THE NEXT YEAR. WHILE SOME UNIVERSITIES HAVE GIVEN OCCASIONAL SPECIAL COURSES, NO ORGANIZATION HAS COME IN WITH A PROGRAM FOR GIVING THESE COURSES THROUGHOUT THE YEAR. IT APPEARS THAT THE GROUP APPLYING AT OAK RIDGE ARE ATTRACTED BY FEELING THAT THE MOST AUTHORITATIVE INFORMATION IS RECEIVED HERE AND, BASED ON OUR EXPERIENCE WITH ORSORT, WOULD NOT RETURN TO THE UNIVERSITIES FOR SHORT COURSES. THE INDUSTRIAL USES OF ISOTOPES COURSE HAS BEEN GIVEN ONCE TO A FULL QUOTA. THE FUTURE RESPONSE IN TERMS OF NUMBERS IS NOT CLEAR. HOWEVER, ORINS HAS BEEN ABLE TO GET THE COURSE ORGANIZED AND FACILITIES DEVELOPED IN A MANNER NOT AVAILABLE TO UNIVERSITIES.

THE WORK OF THE UNIVERSITY RELATIONS DIVISION IS STRICTLY A COMMISSION FUNCTION AND IS DETERMINED ENTIRELY ON COMMISSION JUDGMENT OF THE EXTENT TO WHICH FELLOWSHIPS WILL BE GRANTED AND PARTICIPATION IN THE NATIONAL LABORATORY PROGRAMS BY UNIVERSITY PEOPLE IS DESIRED. OUR EXPERIENCE WITH OTHER GROUPS ADMINISTERING FELLOWSHIP PROGRAMS FOR THE COMMISSION /THE FORMER AEC-NRC FELLOWSHIPS AND THE RECENT IAEA FELLOWSHIPS/ WAS NOT GOOD. THE PRESENT REQUIREMENTS OF MAINTAINING THE BOUNDARIES ON "SPECIAL FELLOWSHIPS" REQUIRE RATHER STRONG CONTROL OF THE CONTRACTOR ADMINISTERING THE FELLOWSHIPS.

THERE IS NO UNIVERSITY IN OAK RIDGE TO OPERATE THE MEDICAL DIVISION. HERE AGAIN, UNLESS SPECIAL AND SEPARATE FACILITIES ARE ESTABLISHED SUCH AS AT ANL AND ROCHESTER, ESSENTIAL COMMISSION CONTROL IS NOT POSSIBLE.

IF WE CAN BE OF FURTHER ASSISTANCE, PLEASE DO NOT HESITATE TO CALL.

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