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Information Division

**THE GENERALIZED BIBLIOGRAPHIC FORMAT AS USED BY
THE ECOLOGICAL SCIENCES INFORMATION CENTER**

Linda J. Allison, Helen A. Pfuderer, and Bobbie-Neal Collier

Ecological Sciences Information Center
Information Center Complex

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HIGHLIGHTS

This document is the first revision of ORNL/EIS-71-3 [*Guide to the Generalized Bibliographic Format for the Environmental Information System* (1972)]. ORNL/EIS-71-3 was written in an effort to provide guidelines for the compilation of computer-searchable data bases by the Ecological Sciences Information Center (ESIC). Data bases have a number of separately searchable identifying characteristics or data fields (i.e., author, title, abstract, publication description, etc.). ORNL/EIS-71-3 identified and defined pertinent data fields and provided examples of usage.

As existing data bases were developed and expanded and new data bases were created in the years following publication of ORNL/EIS-71-3, the need arose to redefine some of the original data fields and to add new ones.

The data fields currently in use by ESIC are alphabetically listed and briefly defined. Format policy concerning spelling, punctuation, numerical data, scientific notation, abbreviations, and use of typographic characters is discussed. A detailed section illustrates the use of some of the data fields by such data bases as Thermal Effects, Ecosystem Analysis, Low-Level Radioactive Waste Technology, and National Uranium Resource Evaluation. The individual data fields are defined in detail, and guidelines for their use are given. Many examples are included to illustrate some of the variations an information specialist might encounter.

The document concludes with an appendix which briefly discusses a recently added data base, Research in Progress on Low-Level Radioactive Waste Technology. It is expected that the number of appendices will increase as new data bases are created.

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INTRODUCTION

The purpose of this document is to provide guidance for the preparation of computer input for the information programs being developed by the Ecological Sciences Information Center (ESIC)/Information Center Complex (ICC) of the Oak Ridge National Laboratory (ORNL). Through the use of a generalized system, the data of all the centers of ICC are compatible.

Literature included in an information data base has a number of identifying characteristics. The obvious characteristics are identifiers such as author, title, and abstract. Less obvious characteristics, such as taxon or publication description, are also valuable in locating and identifying relevant documents. Each of these characteristics or *data fields* can be recognized and searched by the computer.

Each entry begins with a "<>" symbol and is followed by the data fields needed to describe that reference. These fields can be placed in any order. The information for each field must have an alphanumeric label or field descriptor. These labels, given between the symbols < and >, cannot exceed eight characters (including spaces) in length and must begin with a letter of the alphabet. All of the labels presently used are sets of upper-case letters approximating the name of the field they represent (Table 1). Presently, there are 69 identified fields; additional fields may be included in the future.

The format defined here is designed to facilitate the input of information to the ADSEP program (Brooks, 1970). This program processes data for the ORNL on-line (ORLOOK) search system and is a special case of the ADSEP text input option (Brooks, 1971).

Questions and comments are welcome. Please contact one of the authors:

Linda J. Allison	Bobbie-Neal Collier	Helen Pfuderer
Building 1505	Building 2001	Building 2001
(615)576-0567	(615)574-7768	(615)574-7764

Oak Ridge National Laboratory, Oak Ridge, Tennessee 37830
Phone: FTS 626-0567, 624-7768, or 624-7764.

Table 1. Alphabetic listing of field descriptors

Identifier	Description
<ABSTRACT>	Concise statement of document content, results, and conclusions
<AIRCRAFT>	Type of aircraft
<AUTHOR>	Names of persons writing document
<AVAIL>	Secondary availability: where a document may be purchased, copied, or borrowed outside Oak Ridge area
<BENDIX>	Number specific to each geographic quadrangle
<BIBL NO>	Record number used to cross-reference information from various files. May be used to connect bibliographical and numerical information
<BIOSYSCD>	Biosystematic code number
<CODEN>	Five-letter code for serial publications
<COMMENT>	Any pertinent information not covered by other fields
<CONTR NO>	Numbers assigned to contractors issuing reports
<CORPAUTH>	Corporate authority: address of author or of institution originating document
<COSATI C>	Number-letter code used for subject indexing
<COUNTRY>	Used when research was sponsored solely by a country other than the United States
<COUNTY>	County where mine property is located
<CROSSCOD>	Five-digit number used for subject indexing
<DATADATE>	Date when data were taken
<DATADESC>	Description of numeric data, format, and storage
<DATA IND>	Relevance number (1,2,3,4)
<E LNG>	Longitude of east side of quadrangle
<EPRI>	Priority set by the Department of Energy

Table 1. (continued)

Identifier	Description
<ESD NUM>	Assigned number according to Environmental Sciences Division publications list
<FIS YEAR>	Fiscal year in which surveys were flown
<FIT>	Free index term keywords
<FLY DATE>	Dates airborne data were gathered
<F TITLE>	Title in foreign language
<GEOCODE>	A five-letter abbreviation for the lithologic units found in an area
<GEOFORM>	Structural, geomorphological, or formational units
<GEODESC>	Geographic description of locations relevant to content of article
<GEOUNITS>	A description of the lithologic units found in a region
<HEADER>	Identifying number of hard copy documents
<INPUTEAM>	Coded initials identifying persons who selected and indexed articles for input
<KEYWORDS>	Descriptors of document content
<LANGUAGE>	Language in which document is written
<LATITUDE>	Latitudes of study area
<LIT AGE>	Geologic age of a formation according to the literature
<LITERATU>	Literature source or literature published by the data center
<LIT TYPE>	Type of literature indexed: book, journal, proceedings, etc.
<LMF>	Linear miles flown
<LONGITUD>	Longitudes of study area
<MEAS PAR>	Measured parameters

Table 1. (continued)

Identifier	Description
<MEAS RAD>	Measured radionuclides
<MENTOR>	Thesis advisor
<MPN-LOC>	Mine property number location
<N LAT>	Latitude of north side of quadrangle
<NTA>	Alphabetic portion of National Topographic Map Series number
<NTN>	Numeric portion of National Topographic Map Series number
<NUM DATA>	Tables of data — may be alphanumeric
<OR AVAIL>	Oak Ridge area availability
<ORG>	Organization responsible for collecting quadrangle data
<PARMLIST>	Parameters listed in article
<PRIORITY>	NURE priority for surveying quads most likely to contain uranium resources
<PUB DATE>	Date of publication of article
<PUB DESC>	Description of publication: journal name, volume, report number, publisher, etc.
<PVT KWD>	Private keywords, of meaning only to input team
<QUADNAME>	Name of 1:250,000 scale topographic quadrangle
<RESTRCTN>	Current security classification or date of declassification
<SEC SOUR>	Abstract journal or service in which the reference may be found
<S LAT>	Latitude of south side of quadrangle
<SPAC>	Number of miles between survey flight lines
<SPONSOR>	Group or agency sponsoring work if different from <CORPAUTH>

Table 1. (continued)

Identifier	Description
<STATE>	State where mine property is located
<SUBJ CAT>	Subject category; broad field descriptor
<TAPE NO>	Numbers assigned to data tapes
<TAXON>	Taxonomic descriptions: genus and species names of organisms studied
<TAXON 2>	Class, family, order, etc., of organisms studied
<TITLE>	Title of document
<TYPE>	The type of data being input (i.e., tape, data center, or data base)
<W LNG>	Longitude of west side of quadrangle
<YEAR>	Date the tape, data base, or data center was created

GENERAL INFORMATION AND INSTRUCTIONS

Format Policy

Spelling

Americanized spellings should be used throughout. If British spellings appear in an author abstract, change them (e.g., color, not colour; meter, not metre).

Do not split words at the end of a line.

Punctuation

Use a semicolon only between units of the same level (e.g., keywords, authors, etc.) because the use of a semicolon creates a break in any ensuing indexes.

Numerical data

Most of the material dealt with is bibliographic. There will, however, be an increasing emphasis on numerical data, so review abstracts for data. When using numerical data, pay particular attention to the fields <NUM DATA>, <DATADATE>, and <PARMLIST>, and review the instructions for the use of these labels.

Character limit for sorting

The total number of characters (letters, numbers, and spaces) which can be sorted (placement of references within listing) is 7290. Under special circumstances, references may be longer than the 7290 characters, but both publication and searching can present problems with the longer references.

Tables must be limited to 48 characters per line in order to be published in a two-column format. The character appearing in the 48th column of each line entered must be a delimiter, distinct from other characters contained in the table.

Use of characters

The character set now regarded as standard includes: Roman alphabet in upper and lower case, numerals 0-9, @ # % , * \$ < . - / + _) (| & >

: ; ' ? " = ! (. Some characters, < > @ * : ¢ ; , have special meaning in certain situations. Formulas and characters such as Greek letters (Table 2), superscripts, and subscripts which may be encountered in an abstract must be altered before they can be accepted as input. Do not use Roman numerals. Use Arabic equivalents for Roman numerals and names for Greek letters.

Table 2. Greek alphabet

Word	Symbol	Word	Symbol
Alpha (a).....	A α or a	Mu (μ).....	Μ μ
Beta (b).....	B β or b	Xi (x).....	Ξ ξ
Gamma (g).....	Γ γ	Omikron (o).....	Ο ο
Delta (d).....	Δ δ or d	Pi (p).....	Π π
Epsilon (e).....	E ε	Rho (r).....	Ρ ρ
Zeta (z).....	Ζ ζ	Sigma (s).....	Σ σ or s
Eta (h).....	Η η	Tau (t).....	Τ τ
Theta (th).....	Θ θ or d	Upsilon (u).....	Υ υ
Iota (i).....	Ι ι	Phi (ph).....	Φ φ or f
Kappa (k).....	Κ κ or x	Chi (ch).....	Χ χ
Lambda (l).....	Λ λ	Psi (ps).....	Ψ ψ
Mu (μ).....	Μ μ	Omega (o).....	Ω ω

Scientific notation

Spell out element and compound names except in abstracts. Super- and subscripts are not routinely available in the computer character sets; therefore, the following conventions have been established:

1. X sub 2 (X being a variable) means X_2 or X subscript 2.
2. 10(E+3) or X(E-3) (E denoting exponent) means 10^3 or X^{-3} , respectively.
3. For measurements, use the standard abbreviations for square or cubic terms in abstracts (e.g., cu mm). For terms above the cubic level and in equations, use the form X^4 (X represents any unit of measurement) (e.g., cm⁴ means cm⁴).
4. In chemical compounds and elements, H₂SO₄, for example, means H₂SO₄.

Do not use hyphens in naming isotopes (e.g., cesium 137, not cesium-137).

For further information on scientific notation and abbreviations, see Tables 3, 4, and 5.

Table 3. Verbalizing for machinability

<u>Degrees</u>		<u>Plus or minus (+)</u>
32°	use 32 deg	Use + or -
32°F	use 32 F	
32° 16'18"	use 32 deg 16 min 8 sec	<u>Special symbols</u>
<u>Fractions</u>		= use approximately
Use the slash (virgule) for the fraction bar:		~
$x = \frac{a-b}{c}$	use $x = (a-b)/c$	→ use yields (chemistry) use approaches limit of (mathematics)
$x = a - \frac{b}{c}$	use $x = a-(b/c)$	# use no.
<u>Greater than</u>		& use "and" in titles, abstracts, and annotations
Use >		∞ use infinity
<u>Greater than or equal to (>=)</u>		λ use wavelength (electronics and physics) use lambda (all other)
Use > or =		Ω use ohms (electricity and electronics) use omega (all other)
<u>Italics</u>		φ use phase (electricity and electronics) use phi (all other)
Generally capitalize		
<u>Less than</u>		<u>Square root</u>
Use <		$\sqrt{a-b}$ use square root of (a-b)
<u>Less than or equal to (<=)</u>		$(a-b)^{1/2}$
Use < or =		<u>Subscripts</u>
<u>Logarithms</u>		V_1 use V sub 1
$\log_{10}$	use log	B_5 use B (omit the 5, which is the atomic number of boron)
$\log_e$	use ln	

Table 3. (continued)

<u>Superscripts</u>		<u>Special terms</u>
H^+	use H(+)	To set off special terms use single quotes: for example, for the term <u>quasar</u> use 'quasar'
SO_4^{--}	use SO4(--)	
V^{5+}	use V(E+5)	<u>Abbreviations</u>
U^{234}	use U 234	Use only those abbreviations from an approved list (see Table 4). A period is used only with the abbreviations for inch and number.
B^{10}	use B 10	
$O^{18} (p,n)N^{15}$	use O 18 (p,n)N 15	
<u>Underscoring</u>		
Do not use <u>underscoring</u> .		

Table 4. List of approved abbreviations

absolute	abs
acceleration due to gravity	g
adrenocorticotrophic hormone	ACTH
against	vs
alternating current	ac
American Society for Testing Materials	ASTM
American wire gauge	AWG
ampere	amp
ampere-hour	amp hr
and others	et al.
antilogarithm	antilog
atmosphere	atm (unit)
barrel	bbl
biological oxygen demand	BOD
Birmingham wire gauge	BWG
board foot	fbm
boiling point	bp
British thermal unit	Btu
bushel	bu
calorie (gram)	cal
centimeter	cm
chemically pure	cp
chemical oxygen demand	COD
cologarithm	colog
cosecant	csc
cosine	cos
counts per minute	cpm
counts per second	cps
cubic centimeter	cc (liquid), cu cm (solid)
cubic feet per minute	cfm
cubic feet per second	cfs
cubic foot (feet)	cu ft

Table 4. (continued)

cubic inch	cu in.
cubic meter	cu m
cubic yard	cu yd
cubic millimeter	cu mm
Curie	Ci
cycles per second	c/s, Hz
day	spell out
dead weight (tons)	dwt
decibel	dB
degree Baumé	Be
degree Centigrade (see degree Celsius)	
degree Celsius	C
degree Fahrenheit	F
degree Kelvin	K
degree Rankine	R
deoxyribonucleic acid	DNA
deoxyribonuclease	DNAse
diameter	dia
diamond-pyramid hardness	dph
2,3-dimer-captopropanol	BAL
direct current	dc
disintegrations per minute	dpm
disintegrations per second	dps
dissolved oxygen	do
dollar	\$
dozen	doz
dram	dr
east	E
electrocardiogram	EKG
electromotive force	emf
electron volts	eV
figure	fig

Table 4. (continued)

foot (feet)	ft
footcandle	fc
footlambert	fl
foot per minute	fpm
foot per second	fps
foot pound	ft lb
foot-pound-second (system)	fps (system)
for example	e.g.
freezing point	fp
frequency, high	hf
frequency, low	lf
frequency modulation	fm
frequency, ultrahigh	uhf
frequency, very high	vhf
gallon	gal
gallons per minute	gpm
gallons per second	gps
grain	spell out
gram	g
gram calorie	g cal
grams per liter	g/l
half-value layer	hvl
Hertz	Hz
high frequency	hf
high voltage	hv
horsepower	hp
horsepower-hour	hp hr
hour	hr
in the place cited	loc. cit.
in the same place	ibid.
in the work cited	op. cit.
inch	in.
inches per second	ips

Table 4. (continued)

intravenous	IV
kilocalorie	kcal
kilocycle	kc
kilogram	kg
kilometer	km
kilovolt	kV
kilovolt-ampere	kVA
kilowatt	kW
kilowatt-hour	kWh
lambert	L
latitude	lat
lethal dose (subscript for percent)	LD50
linear energy transfer	LET
liter	spell out, except in combination with other units (g/l)
logarithm (common)	log
logarithm (natural)	ln
magnetofluidynamics	mfd
magnetohydrodynamics	mhd
maximum permissible concentration	MPC
mean free path	mfp
median tolerance limit	TLM
megarad	Mrad
megawatt	Mw
meter	m
meters water equivalent	mwe
microcurie	uCi
microgram	ug
microgram per liter	ug/l
micromicrocurie	uuc
micromicron	uu

Table 4. (continued)

micron	u
mile	spell out
miles per hour	mph
milliequivalent	meq
milligram	mg
milligrams per liter	mg/l
millimeter	mm
millimeters of mercury	mmHg
million	spell out, except as prefix
minute (time)	min
molar (with number only)	M (0.5M)
mole	spell out
molecular weight	mol wt
month	spell out
normal (solutions) (with number only)	0.5 N
north	N
nuclear magnetic resonance	NMR
ortho- (in organic compounds)	o
ounce	oz
ounce-foot	oz ft
ounce-inch	oz in.
para- (in organic compounds)	p
parsec (19.2 T miles)	psc
parts per billion	ppb
parts per million	ppm
parts per thousand	ppt
percent (with numbers, weight, volume, or mole only)	%
pound	lb
pound centigrade unit	PCU
pounds per cubic foot	lb/cu ft

Table 4. (continued)

pounds per square foot	psf
pounds per square inch	psi
pounds per square inch absolute	psia
power factor	spell out
pulse per second	pps
radiation-absorbed dose	rad
relative biological effectiveness	RBE
revolutions per minute	rpm
revolutions per second	rps
rod	spell out
Roentgen	R
Roentgen equivalent, man	rem
root mean square	rms
second (time)	sec
shake	spell out
sine	sin
south	S
specific activity	sp act
specific gravity	sp gr
specific heat	sp ht
specific volume	sp vol
square	sq
square centimeter	sq cm
square foot	sq ft
square inch	sq in.
square kilometer	sq km
square meter	sq m
square millimeter	sq mm
square root of mean square	rms
standard temperature and pressure	STP
steradians	sterad
tangent	tan
that is	i.e.

Table 4. (continued)

thousand tons	kt
ton	spell out
tons per square inch	tsi
ultra high frequency	uhf
ultraviolet	uv
United States Pharmacopoeia	USP
versed sine	vers
very high frequency	vhf
volt	V
volt-ampere	VA
volt-coulomb	spell out
volume percent	vol %
Watt	W
watt-hour	Wh
week (-ly)	spell out
weight	wt
weight percent	wt %
west	W
yard	yd
year	yr

Table 5. Specific quantities and the abbreviations of symbols used with them

Quantity	Prefix	Symbol
10^{12}	tera	T
10^9	giga	G
10^6	mega	M
10^3	kilo	k
10^2	hecto	H
10^1	deca	D
10^{-1}	deci	d
10^{-2}	centi	c
10^{-3}	milli	m
10^{-6}	micro	$\mu = u$
10^{-9}	nano	n
10^{-12}	pico	p

Use of Fields

The reason a data base is compiled is the primary factor in determining the appropriate identifying fields. All fields are not used in every data base. The following figures illustrate the use of various fields for standard bibliographic input by several of the data bases.

Figure 1 represents a standard ESIC input form. This input sheet is used, with minor variations, by such data bases as Aquatic Impacts, Impingement, Thermal Effects, Carbon, Ecosystem Analysis, Corbicula, etc. Fields which are necessary for identification of a document are completed in the illustration. Several fields, however, are left blank. These fields are filled in only under the special circumstances listed below:

<HEADER>	<u>Header</u> - used only when it is necessary to correlate with the numbered, hard copy document
<GEODESC>	<u>Geographic description</u> - used only when the document contains field data taken at a specific place
<DATADATE>	<u>Data date</u> - used only when the specific time at which the data were taken is pertinent to the end results obtained
<OR AVAIL>	<u>Oak Ridge availability</u> - used when ESIC does not retain the original document
<AVAIL>	<u>Availability</u> - used to tell how to acquire documents which are particularly difficult to locate
<SPONSOR>	<u>Sponsor</u> - used when the agency funding the research is different from the corporate authority
<MENTOR>	<u>Mentor</u> - used to identify the mentor or advisor of a thesis work
<PARMLIST>	<u>Parameter list</u> - used to give modeling and ecosystem analysis parameters
<SEC SOUR>	<u>Secondary source</u> - used only when hard copy documents are unavailable to ESIC (e.g., dissertation abstracts)
<COUNTRY>	<u>Country</u> - used when the research was sponsored solely by a country other than the United States
<LANGUAGE>	<u>Language</u> - used when the document is not written in English
<PVT KWD>	<u>Private keyword</u> - used to sort abstracts for a review article or as a cross-indexing identifier of meaning only to the input team

ESIC INPUT

ESIC INPUT		<H>
<I> ESIC, HEC	 Journal	<PU> 1974
<TI> Asiatic Clam, CORBICULA MANILENSIS (Philippi), in the Tidal James River, Virginia		
<AU> Diaz, R.J.; Powell, E.C., Jr.		
<COR> Virginia Institute of Marine Science, Department of Biological Sciences, Gloucester Point, VA		
<PUB> Chesapeake Science 15(2):118-120		
<G> Virginia, Richmond, James River		
<DA> 1971 - 1972	<O> C.C. Constant, ORNL/ESD	<AV>
<T> CORBICULA MANILENSIS; LIMNORHINUS CERVIX		
<CO> Provides 5 references, 3 tables, and 2 illustrations		
<SP>		
<M>	<P>	<S>
<COU>	<L>	<PV>

CS 1479
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Fig. 1. Ecological Sciences Information Center input form.

Several data bases use input forms different from the ESIC standard input sheet. Two examples are the Low-Level Radioactive Waste Technology Data Base (Figure 2) and the National Uranium Resource Evaluation Data Bases (Figure 3).

The Low-Level Radioactive Waste Technology (LLW) Data Base input sheet employs most of the field descriptors used on the standard ESIC input sheet. A number of fields must be completed on every document: <INPUTEAM>, <PUB DATE>, <TITLE>, <AUTHOR>, <CORPAUTH>, <PUB DESC>, <ABSTRACT>, <SUBJ CAT>, <KEYWORDS>, and <DATA IND>. All except <DATA IND> are repetitions from the ESIC input sheet and have been previously defined. The field designated by <DATA IND>, representing data index, is designed to numerically sort documents according to their pertinence to low-level radioactive waste technology. Documents are rated 1, 2, 3, or 4:

- 1 - signifies documents directly related to low-level radioactive wastes,
- 2 - specifies documents which contain considerable material pertinent to low-level radioactive wastes,
- 3 - designates documents which have some material related to low-level radioactive wastes, and
- 4 - denotes documents containing material which would require a great deal of interpretation to apply to low-level radioactive waste technology.

The following fields on LLW input sheets are used only under the specific conditions described below:

<GEODESC>	<u>Geographic description</u> - used when the data reported in the document pertain to a specific geographic location
<DATADATE>	<u>Data date</u> - used when the time span in which the data were collected is of importance
<MEAS RAD>	<u>Measured radionuclides</u> - used when numeric data on specific radionuclides are presented. The radionuclides are designated by chemical symbols, followed by atomic mass numbers if given.
<MEAS PAR>	<u>Measured parameters</u> - used when numeric data on the factors which influence radionuclide migration are present. Parameter names are always written out in full.

LLW INPUT

		<M>
<I> SLB, ESIC/ESIC, PTO	 Journal	<PU> 1959, June
<TI> Structural Implications in Cesium Sorption		
<AU> Tamura, T.; Jacobs, D.G.		
<COR> Oak Ridge National Laboratory, Oak Ridge, TN		
<PUB> Health Physics 2:391-398		
<G> Tennessee, Oak Ridge, Oak Ridge National Laboratory		
<DA>	<O>	<AV>
<MR> C _s		
<MP> Cation Exchange Capacity		
<CO> This paper reports the results of tests made with several clay minerals, including the local Connasauga shale, and discusses sorption of cesium by considering the effect of the c-axis dimensions of the clay minerals.		
<SP> U.S. Atomic Energy Commission		
<N>	<DI> 1	<CDU>
		<L>

UCR-12873
5-77)

Fig. 2. Low-Level Radioactive Waste Technology input form.

NURE INPUT

<I> ESIC, PAC	<II> Thesis	<PO> 1965
<YT> Isotopic Distribution of Uranium and Thorium in Soils Weathered from Granite and Alluvium		
<AU> Hansen, R.O.		
<CU> University of California, Geology Department, Berkeley, CA		
<PO> Ph.D. Dissertation; 126 pp.		
<S> California, Tuolumne County; California, Mariposa County; California, Madera County; California, Fresno County		
<QUADNAME> FRESNO; MARIPOSA		
<BENDIX> 2084; 2078		
<I>		
<GEOPORN> Ahwahnee Soils; Musick Soils; Siskiyou Soils; Holland-Shaver Soils; Montpelier Soils; Snelling Soils; San Joaquin Soils; Ripperdan Soils; Greenfield Soils; Tujunga Soils; Yosemite Valley; San Joaquin Va. ey		
<SP>		
<CU>	<I>	<AV>

Fig. 3. National Uranium Resource Evaluation input form.

The National Uranium Resource Evaluation (NURE) consists of a series of six data bases: Bibliographic, Numeric, Uranium Mine Location, Geological Unit, Quadrangle File, and Contractor's Report. Three of these data bases (Bibliographic Data Base, Numeric Data Base, and Contractor's Report Data Base) use the same general NURE input form (Figure 3).

Bibliographic Data Base

Many of the same basic fields utilized in the standard ESIC input forms are used by the National Uranium Resource Evaluation Bibliographic (Grand Junction) Data Base. These fields include: <INPUTEAM>, <LIT TYPE>, <PUB DATE>, <TITLE>, <AUTHOR>, <CORPAUTH>, <PUB DESC>, <ABSTRACT>, <SUBJ CAT>, and <KEYWORDS>. Those fields which differ from ESIC forms or are completed only under specific conditions are listed below:

<GEODESC>	<u>Geographic description</u> - used when the document describes specific geographic locations
<TAXON>	<u>Taxon</u> - used when biological organisms pertain to data included in the document
<QUADNAME>	<u>Quadrangle name</u> - used only when the geographic locations can be cataloged into one or more quads
<BENDIX>	<u>Bendix number</u> - used in conjunction with the <QUADNAME> field
<GEOFORM>	<u>Geologic formations</u> - utilized when geologic formations and regional structures are discussed in a report
<SPONSOR>	<u>Sponsor</u> - used when AEC, ERDA, or DOE-GJO sponsors the work
<COUNTRY>	<u>Country</u> - denotes the country solely responsible for sponsoring the research when it is not the United States
<LANGUAGE>	<u>Language</u> - gives the foreign language in which the paper was written
<COMMENT>	<u>Comment</u> - clarifies or adds information not found in other fields

Numeric Data Base

The fields on the NURE Numeric Data Base input form which must contain information are <INPUTEAM>, <TITLE>, <AUTHOR>, <CORPAUTH>, <ABSTRACT>, <SUBJ CAT>, <KEYWORDS>, <TYPE> (type of data being input), <YEAR>, and <SEC SOUR>. Other fields which may or may not contain information are as follows:

<LITERATU>	<u>Literature</u> - used when there has been some sort of literature published by the data center
<LATITUDE> and <LONGITUD>	<u>Latitude and Longitude</u> - describe the measurements needed to encompass a study area

Contractor's Report Data Base

Only two fields in the Contractor's Report Data Base need not be completed on the form at the present time: <BIBL NO> and <TAPE NO>. All other fields must contain information.

Geounits Data Base

The fields that must be completed on the Geounits forms are <QUADNAME>, <BENDIX>, <CONTR NO>, <GEOCODE>, <GEOFORM>, and <LIT AGE>. In rare cases, <GEOUNITS> may be omitted. The <COMMENT> field is utilized to clarify discrepancies encountered in the <GEOCODE> field.

Quadfile Data Base

There are several fields in this data base that need to be completed for each record. These include <QUADNAME>, <BENDIX>, <N LAT>, <S LAT>, <E LNG>, <W LNG>, <GEOGOESC>, and <EPRI> (DOE's priority). Fields which may or may not contain information are as follows:

<FIS YEAR>	<u>Fiscal year</u> - used when a quadrangle was surveyed in a particular fiscal year
<COMMENT>	<u>Comment</u> - emphasizes pertinent information not found in other fields
<NTA>	<u>National topographic - alphabetic</u>

<NTN>	<u>National topographic - numeric</u>	
<SPAC>	<u>Spacing in miles</u>	} these data are input when known
<LMF>	<u>Linear miles flown</u>	
<AIRCRAFT>	<u>Aircraft type</u>	
<ORG>	<u>Organization</u>	
<PRIORITY>	<u>Priority status</u>	

Uranium Mines File

All five fields in this data base need to be completed. Each county-state-quad combination is a separate record. The data base includes <STATE>, <COUNTY>, <QUADNAME>, <BENDIX>, and <MPN-LOC>.

EXPLANATION OF DATA FIELDS

<ABSTRACT>

Content

The abstract should be a concise statement in a single paragraph of the essence of a document. It should summarize the *major* results and conclusions. When data sets are described, the methods, instruments, and/or techniques must be included to allow the user to correctly interpret the data.

Abstracts are of two general types: indicative and informative. The indicative abstract merely describes the kind of information contained in the document; the informative abstract actually presents relevant information from the document. Informative abstracts should be written whenever possible.

Necessary reference to other work is given as a citation within the abstract. An author's abstract should be used only when the abstractor cannot improve it with additional data.

Credit Notation

At the end of an abstract, the author of the abstract is given credit by abbreviations in parentheses. Credit may be given to an individual abstractor by using his/her initials (KM), to the author of the document (Auth), or to an agency (NSF). An author abstract which has been modified should have both (Auth) and the abstractor's initials in parentheses following the abstract [e.g., (Auth)(KM)]. A change in or the addition of one sentence is sufficient to add the abstractor's initials to the author's. When the only information available for citation is the abstract of a paper presented at a meeting, the credit notation at the end of the abstract is (COMPLETE TEXT).

EXAMPLESIndicative Abstract

This bibliography of 812 references was prepared for those engaged in ecological research in marine and estuarine environments. Emphasis is on work pertaining to radioisotope movements. Indexes of author names, geographic locations, sponsors, and subjects are provided. (CO)

Informative Abstract

Experiments with MELANOPLUS DIFFERENTIALIS showed that strontium 85 was eliminated much more rapidly than was cesium 137. Elimination of cesium 137 proceeded at a rate corresponding to a biological half-life of about 12 hours. For M. FEMUR-RUBRUM, biological half-lives were about 30 hours for Cs 137 and 10 hours for Sr 85. The smaller species of grasshopper eliminated both isotopes more rapidly than did the larger one, indicating that the rate of elimination appeared to increase with decreasing size of the insect. (KM)

Data Set Abstract

These data contain hourly measurements of temperature (in tenths of a degree Fahrenheit), wind velocity (in miles per hour), wind direction (from 1-360 degrees with North at 360), and precipitation (in hundredths of inches) for the X-10, Y-12, K-25, Tower Shielding, and Town Site weather stations in the Oak Ridge area for the years 1958-1968. (Auth) (RLS)

<AIRCRAFT>

The type of aircraft used during reconnaissance missions by NURE contractors is included in this field. Use either "RW" or "FW" to indicate whether a rotary wing or fixed wing aircraft was utilized by the contractors for surveying purposes.

<AUTHOR>

Personal Authors

Enter the author of the paper with the last name first, followed by a comma, a space, and the initials with periods but no space between initials. Separate multiple authors by semicolons with a space after each semicolon. Do not use the word "and" before the name of the last of two or more authors. List all authors; do not use "et al." This permits all papers by an author to be located regardless of his or her position in the author list. If the document is a chapter of a book and is by identified authors, enter these in the <AUTHOR> field and enter the book editor in the <PUB DESC> field. Enter foreign names such as Riso, Krüger, or de Salvo as Riso, Kruger, or De Salvo. Treatment of compound names varies with the nationality of the author. See examples below and in the *Council of Biology Editors Style Manual* (1972).

Collaborator

Many integrated research projects result in manuscripts with confused authorships. If a person has made a major contribution to the research even though he/she is not called an author, include his/her name in the author field followed by (Collab.).

Committee Reports

In dealing with a committee report, name the organization and then the committee. If the chairman's name is given, use it as well as the name of the committee. Do not duplicate information given in the <CORPAUTH> field.

No Author Given

If a paper has no author, leave field blank. In this case look for a corporate authority. In some cases (e.g., the NURE Numeric Data Base) the author field may be used for the person to contact for further information.

Editors

To designate the editor of a book or a proceedings, use (Ed.) after the editor's name. If citing a part of a larger work, enter the author for that part (if there is one) in the <AUTHOR> field and record the editor's name (if different from the credit given in the <AUTHOR> field) and the name of the whole work in the <PUB DESC> field.

Translators

Give the name of the translator followed by the word "Translator" in parentheses. When both the original author and the translator are known, give the translator last.

EXAMPLESPersonal Authors

Brown, J.M., Jr.

Jones, B.A.; Russell, C.M.; Schnook, H.J.; Vitilli, O., III

Collaborator

Sollins, P.; Edwards, N.T. (Collab.)

Committee Reports

Committee on Environmental Protection. National Research Council
would appear in the <CORPAUTH> field.

Editors

Berg, G.B. (Ed.)

Gates, D.M. (Ed.); Schmerl, R.B. (Ed.)

Translators

Jermain, R.V. (Translator)

Rodin, L.E.; Bazilevich, N.I.; Scripta Technica Ltd. (Translator)

<AVAIL>

The primary availability of a document will ordinarily appear in the <PUB DESC> field. The <AVAIL> field is used mainly for government-sponsored reports, where documentation centers function as a secondary source. The National Technical Information Service (formerly the Clearinghouse for Federal Scientific and Technical Information, Springfield, VA) is a prime example. In general, copies of all government and many foreign documents may be purchased there. Other important sources are the Superintendent of Documents, Government Printing Office, Washington, D.C.; Her Majesty's Stationery Office, London; DOE Repository Libraries; International Atomic Energy Agency, Vienna; Special Libraries Association Translation Center, John Crerar Library, Chicago (for translations); and University Microfilms, Ann Arbor, Michigan (for theses). Proceedings of conferences are often available from the sponsoring society. If the U.S. agent for a foreign publication is known, give it. If price or other ordering information is available, include it within parentheses.

Put the address of the investigator or the central storage point for data sets in this field since the data sets will not have been published.

EXAMPLES

National Technical Information Service, Springfield, VA (\$3.00)
American Nuclear Society, La Grange Park, IL
University of Georgia, Dept. of Botany, Athens, GA
John Crerar Library (microfiche only), Chicago, IL

<BENDIX>

Each of the 621 National Topographic quadrangles (scale 1:250,000) has an exclusive name and number assigned to it. The <BENDIX> field is the four-digit number which corresponds to a particular quadrangle name (<QUADNAME>).

The proper <BENDIX> number can be found in the 15-page handout which lists both the <QUADNAME> and <BENDIX> within the nine designated national regions. Anyone working on the NURE (National Uranium Resources Evaluation) project can obtain this handout from the Ecological Sciences Information Center.

EXAMPLES

<u>BENDIX</u>	<u>QUADNAME</u>
4227	MOAB
1019	WALLA WALLA
7354	WINSTON-SALEM

<BIBL NO>

This field contains the record number used to cross-reference or link information from various data files. Files of numeric and alphanumeric information can be tied to the bibliographic data base with this field.

<BIOSYSCD>

The Biosystematic Code is a five-digit code number used to identify taxonomic phyla, classes, orders, and, within Mammalia, families. The Biosystematic Code is used by BIOSIS (Biosciences Information Service) for indexing *Biological Abstracts* (BA) and *BioResearch Index Abstracts* (BRI). The book *Biosystematic Code* (1968) contains the key to the codes and is used as a tool to profile from these data bases. This field might be used in bibliographies which combine references from BA or BRI with references abstracted within ESIC.

<CODEN>

A five-letter code for a serial publication, as established for the American Society for Testing and Materials, is entered in this field.

<CODEN> for specific journals can be found with the full journal title in the Energy Information Data Base for *Serial Titles* (February, 1978).

<COMMENT>

Any type of information that is not specifically recorded in other fields may be included in this field. This may be information that is useful only to one's own group, such as cross references, tables, or comments. This field is also used to clarify and qualify vague information which may be found in the <GEOCODE> field of the Geounits Data Base. Many geologic formations have two or more codes used by various NURE contractors; this field explains the differences in the codes by stating which code was used with which report.

There are no special restrictions on the form of information entered in this field. However, use of semicolons creates breaks in any ensuing index.

Some of the information entered here may reflect deficiencies in the list of fields. The addition of new fields to the general list may result from a review of the information being entered in the <COMMENT> field.

Where the comment field contains subjective material, such as a book reviewer's opinion of a work, give the commentator's name.

EXAMPLES

Second of a series of books; seven were published by 1970
Provides 182 references, 34 tables, and 11 illustrations
Gives best review on topic to date (J.S. Olson 7/15/71)
Expanded version of Nucl. Sci. Eng. 30:262 (1967)
Cch was used in Lawton (from Geounits Data Base)

<CONTR NO>

The contract number assigned to each of the numerous companies, consulting firms, businesses, laboratories, etc., doing research or development work for DOE is entered in this field. This contractor number is generally found on the front cover of the report. Examples are listed below.

EXAMPLES

AT(05-1)-1654

76-011-S

<CORPAUTH>

The corporate authority is the organization responsible for issuing a report, the organizational affiliation of an author, or the current address of the author.

The principal corporate authority is the institution where the work was performed; it is given first. If the work was shared (e.g., when personal authors of a document are located at different institutions or organizations), indicate the multiple corporate authorities, separated by semicolons. In all cases, the name of the organization is written first and is followed by the city and the state code (Table 6). Organizational affiliations are not repeated unless the departments differ.

For a college or university, list the name of the institution first, then the department, city, and state, as shown below. If the name of the corporate organization has changed, use the name given in the publication. For the USSR, drop "Academy of" if enough information is given and start with the word "Institute."

If there is no corporate authority given, leave field blank.

EXAMPLES

Johns Hopkins University, Department of Zoology, Baltimore, MD
Babcock and Wilcox Co., Power Generation Division, Lynchburg, VA
Battelle Memorial Institute, Columbus, OH
Oak Ridge National Laboratory, Oak Ridge, TN
Battelle-Pacific Northwest Laboratories, Richland, WA
Leningrad Scientific Research Institute of Radiation Hygiene,
Leningrad, USSR
Kernforschungszentrum Karlsruhe, Institut für Strahlenbiologie,
Karlsruhe, German Federal Republic

Table 6. Letter codes for states and territories

Alabama	AL	Montana	MT
Alaska	AK	Nebraska	NB
Arizona	AZ	Nevada	NV
Arkansas	AR	New Hampshire	NH
California	CA	New Jersey	NJ
Colorado	CO	New Mexico	NM
Connecticut	CT	New York	NY
Delaware	DE	North Carolina	NC
Dist. of Col.	DC	North Dakota	ND
Florida	FL	Ohio	OH
Georgia	GA	Oklahoma	OK
Guam	GU	Oregon	OR
Hawaii	HI	Pennsylvania	PA
Idaho	ID	Puerto Rico	PR
Illinois	IL	Rhode Island	RI
Indiana	IN	South Carolina	SC
Iowa	IA	South Dakota	SD
Kansas	KS	Tennessee	TN
Kentucky	KY	Texas	TX
Louisiana	LA	Utah	UT
Maine	ME	Vermont	VT
Maryland	MD	Virginia	VA
Massachusetts	MA	Virgin Islands	VI
Michigan	MI	Washington	WA
Minnesota	MN	West Virginia	WV
Mississippi	MS	Wisconsin	WI
Missouri	MO	Wyoming	WY

<COSATI C>

Number-letter codes from the 22 broad subject fields and 188 groups in the COSATI (Committee on Scientific and Technical Information) Subject Category List (1965) are entered in this field. This field also includes number-letter codes for subject categories used by NTIS for Selected Research in Microfiche (SRM).

Begin each entry with the word "Field" and separate the following number-letter codes by commas.

EXAMPLES

Field 04A, 55A

Field 06F

<COUNTRY>

This field contains the name of the country responsible for the research if it is not sponsored by the United States. Note that this is not the same as the <GEODESC> field. Use the generally accepted Anglicized names of countries (e.g., German Federal Republic, not West Germany or Germany, or the German Democratic Republic, not East Germany).

A small number of widely used abbreviations are permitted in this field (e.g., UK and USSR).

EXAMPLES

UK

Japan

USSR

<COUNTY>

This field is used by the NURE staff to designate the county where the mine property is located.

<CROSSCOD>

Five-digit numbers of three levels [Primary (P), Secondary (S), and Tertiary (T)] used for subject indexing are entered in this field. Use of these codes provides access to all of the topics discussed in each reference. The code numbers are listed and defined in the *Cross Code* book (1968). Separate the numbers by semicolons.

EXAMPLES

07506P; 51506S; 07512S

<DATADATE>

This field is for the date or dates when data in the document were taken. For example, a paper on mercury consumption in the United States in 1968 would give 1968 as the data date. For forest samples taken in 1965 and 1966, both dates are considered relevant.

Since many documents will have a range of dates relevant to the data, give a beginning date and an ending date separated by a space, a hyphen, and a space. If the data concern only one year, give that date twice, separated by a space, a hyphen, and a space.

Months and days may be included when they are particularly pertinent. Write the year followed by a comma, then the month expressed as a number, and end with the day of the month. All numbers should be at least two digits.

EXAMPLES

1953 - 1960

1968 - 1968

1970,06,12 - 1970,09,15

<DATADESC>

This field differs from the <ABSTRACT> field in that it contains a clear statement of how the data are stored (notebook, punched cards, magnetic tape, etc.) plus a description of the format for data that are machine-readable. If the referenced data are not machine-readable, describe them as concisely as possible.

EXAMPLESData Not Machine Readable

There are seven parameters and four samples of trunks of oak trees. The parameters are: description; weight in grams; ratios of cesium 137 to potassium 40, cesium 137 to manganese 54, manganese 54 to potassium 40; percent potassium; and date. The description parameter sample was from the first (O) or second (N) 25 years of growth; when tree was cut; and whether the material was ignited (I) or unignited (U).

Machine Readable Data

These data on water chemistry and quantitative zooplankton are punched on 80-column IBM cards in the following format:

Card 1:

cols.	1 - 6	Sample Site (alphameric)
cols.	7 - 12	Date Year Month Day (integer)
cols.	15 - 16	Number of Species Cards (integer)
cols.	20 - 25	pH (real decimal punched)
cols.	26 - 30	Oxygen in ppm (real decimal punched)
	"	
	"	
	"	
	"	
	"	
cols.	75 - 80	Temperature in Degrees Centigrade (real decimal punched)

<DATA IND>

The field designated by <DATA IND>, representing data index, is designed to numerically sort documents according to their pertinence to low-level radioactive waste technology. Documents are rated 1, 2, 3, or 4:

- 1 - signifies documents directly related to low-level radioactive waste,
- 2 - specifies documents which contain considerable material pertinent to low-level radioactive wastes,
- 3 - designates documents which have some material related to low-level radioactive wastes, and
- 4 - denotes documents containing material which would require a great deal of interpretation to apply to low-level radioactive waste technology.

<E LNG>

This field gives the longitude of the east side of the quadrangle or contract survey region. Only whole degrees are used. This field is defined as numeric.

EXAMPLES

120

176

90

<EPRI>

This is the DOE (formerly ERDA) priority designated for each of the 621 quadrangles. The digits 1, 2, 3, 4, 5, or 6 used in this field are assigned on the opinion that DOE holds for each quad's capability for containing uranium deposits. This field is defined as numeric.

<ESD NUM>

The Environmental Sciences Division (ESD) publication number is assigned according to the ESD publications list. It has previously been used in the place of <BIBL NO> to cross-reference information from separate files.

<FIS YEAR>

The fiscal year in which a quadrangle will be surveyed by DOE or DOE contractors is placed in this field. If 1977 is the fiscal year, use only "77." This field is defined as numeric.

<FIT>

This field contains free-index-terms or keywords used by *Government Reports Announcements* to identify important concepts in a report. This field is used only when a profile is entered into a data base.

<FLY DATE>

The dates that the airborne data were gathered are included in this field. The year precedes the month.

EXAMPLES

1975, May - June

1975, August

<F TITLE>

The foreign title of a book or article, written in the foreign language, is entered in this field.

EXAMPLE

Gedankengänge zur Sitzordnung von Vögeln auf den Drähten von
Freileitungen

<GEOCODE>

This field contains a five-letter (maximum) abbreviation for the lithologic units found in an area. The first letter, which is capitalized, stands for the geologic period or age of the unit (formation or group), and the other letters characterize the formational names.

EXAMPLES

Qal = Quaternary, Aluvium

Pq = Permian, Quartermaster Formation

Kc = Cretaceous, Comanche Peak Limestone

<GEOFORM>

This field includes the structural, geomorphological, or formational unit discussed in a report. Also included in this field are: creeks, rivers, river or creek forks, mines, prospects, and claims. If the specific region is not known, the last three descriptors should go into <GEODESC> if detailed information is available.

The first letter of each word is capitalized, as would be proper for a title.

EXAMPLES

Zuni Uplift

Morrison Formation

Brushy Basin Member

Colorado Plateau

Dolores River

Prickly Pear Creek

Gypsum Valley Anticline

Pine Mountain Overthrust Fault

<GEOGDESC>

This field is used if the reported information is geographically dependent. An entry begins with a generally understood political designation. Other descriptors of the region are added in descending order of importance to give the most specific description possible. Do not use directional designations unless the study is concerned with a particular region of a state or country (e.g., southeast New Mexico). Separate the descriptors by commas.

For studies taking place in the United States, do not use "United States." Begin an entry with the state name and follow with the county or region where the study occurred. (On NURE forms, the state name is entered first and is followed by the county, quadrangles, city, mine, prospect, or claim. Only 15' or 75' quadrangles are entered in this field. The 1:250,000 scale quads are entered in the <QUADNAME> field.)

For studies outside the United States, begin with the name of the country and follow with the appropriate regional subdescription.

For studies comparing the entire United States and other regions, "United States" may be entered in the <GEOGDESC> field.

EXAMPLES

Tennessee, Campbell County

German Federal Republic

German Democratic Republic

Canada, Ontario, Thunder Bay

New Mexico (SE)

Tennessee, Oak Ridge, Oak Ridge National Laboratory

<GEOUNITS>

This field contains a brief description of the lithological unit (formation or group) in a region. This narrative information is taken from the contractor's reports issued by DOE-NURE contractors.

EXAMPLES

Clay, silt, sand, and gravel (for alluvium deposits)

Red and bluish-green shale interbedded with massive fine-grained gray sandstone. Merkel dolomite located at top (for Choza Formation)

<HEADER>

This field may be used for input-team accession numbers. This accession number may be used to identify material in the files of the individual or group entering the document. For instance, the accession number CWF-226 represents the 226th document selected for input by C. W. Francis.

<INPUTEAM>

This field is used to identify the team and/or person selecting the material for input. (This identification may be used to limit a search to material input by a particular team.) Several forms of <INPUTEAM> are used:

1. enter the initials of the originating organization or data base, a comma or slash, and the initials of the person who selected and indexed the article;
2. enter the initials of the originating organization or data base, a comma, the initials of the person who selected the document, a slash, and the initials of the person who abstracted and indexed the article;
3. enter the initials of the originating organization or data base, a comma, the initials of the team or group who selected the material for input, a slash, the initials of the team or group who abstracted the document, a comma, and the initials of the person who abstracted and indexed the article.

This field is used mainly to limit searches. Therefore, if you use initials for the team or individual, it will save space and effort without seriously hindering the readability of the output.

EXAMPLES

1. ESIC/RFC; AM/ND; ESIC, MU
2. ESD, JO/LJA; ESIC, RVH/RFC
3. SLB, ESIC/DM, JT

<KEYWORDS>

Keywords are words, terms, or sets of modified words that serve as identifiers of the document material and concepts. There is no limit to the number of keywords that may be used. Keywords may have modifiers; if they are modified, precede the modifiers with commas. Chemical elements are not hyphenated. Upper case is required for all keywords except pH and Eh. Separate keywords by semicolons.

The building of a word list which can be used as a general guide to the environmental/biomedical sciences has been a continuing activity of the Information Center Complex. The *Environmental/Biomedical Terminology Index* (1976) is the most recently published thesaurus. This thesaurus provides some guidance in choosing keywords, but is necessarily too general for the specialized data bases. Table 7 gives some rules for choosing keywords.

EXAMPLES

(for the indicative abstract given under <ABSTRACT>)

BIBLIOGRAPHY; ECOLOGY; MARINE SYSTEMS; ESTUARIES; RADIONUCLIDE MOVEMENT

(for the informative abstract given under <ABSTRACT>)

GRASSHOPPERS; CESIUM 137; STRONTIUM 85; BIOLOGICAL HALF-LIFE; BODY SIZE

(for the data set abstract given under <ABSTRACT>)

TEMPERATURE; WIND SPEED; WIND DIRECTION; RAIN FALL

Table 7. General rules and conventions for
choosing keywords

-
1. Choose keywords according to:
 - (a) relative frequency
 - (b) relationship to other chosen terms
 - (c) technical precision
 2. Use noun form where possible.
 3. Use singular form for count nouns; plural form for mass nouns.
 - (a) fish by convention are singular
 4. Use natural word order. However, if the second word of a two-word keyword is more likely to be used in a search, put the second word first, then a comma, and the first word. This is especially important if an index is likely to contain several references to the second word.
 5. Qualify words with multiple meanings:
 - (a) use modifying terms
 - (b) use parenthetical qualifying expressions
 6. Choose one of two true synonyms.
 7. Choose one of two quasi-synonyms.
 8. Avoid punctuation marks.
 9. Avoid extreme specificity.
 10. Use multiword descriptors with restraint.
-

<LANGUAGE>

The language of the document as a whole, if it is not English, will be given in this field. If an English abstract is added (i.e., if an English abstract is not included in the original document), indicate this addition by giving the translator's initials in parentheses at the end of the abstract.

EXAMPLES

French

Hungarian

Polish

Russian, English Abstract

<LATITUDE>

This field contains any east-west trending line that is measured north and south of the equator. Degrees, minutes, and seconds are utilized for this description.

Refer to a map to obtain the proper latitudes needed to locate a study area.

EXAMPLES

N39-00 to N42-15

N40-30

N55-30 to N65-00

<LIT AGE>

The age of the geologic formation as it appears in the literature is given in this field (see Table 8). If the epoch is part of the period, use both ages (the period is written first) and separate them with a semicolon.

EXAMPLES

Tertiary; Oligocene

Triassic

Cambrian

Table 8. The geologic time scale

Period	Epoch
Quaternary	{ Recent (Holocene) Pleistocene
Tertiary	{ Pliocene Miocene Oligocene Eocene Paleocene
Cretaceous	
Jurassic	
Triassic	
Permian	
Pennsylvanian	
Mississippian	
Devonian	
Silurian	
Ordovician	
Cambrian	
Precambrian	

<LITERATU>

The titles of documents which have been published or generated by an organization, data base, or data center are entered in this field. If there is more than one publication, separate the titles by semicolons.

<LIT TYPE>

This field indicates the type of literature to which the document belongs, as shown in the examples. The term "Thesis" is used for all advanced degrees. If none of the examples fit a given situation, use the word you think most appropriate and report the addition to one of the authors of this guide.

Dockets and bibliographies are considered reports, as are newspapers and magazines.

EXAMPLES

Book
Congressional Hearings
Dataset
Journal
Patent
Private Correspondence
Conference; Book
Proposal
Report
Thesis
 Ph.D. Thesis
 M.S. Thesis
Map (for NURE)
Preprint

<LMF>

This is the "linear miles flown" field, which describes the total miles flown in a quadrangle.

<LONGITUD>

This field contains any north-south trending line (meridian) that is measured east and west with respect to the International Date Line and the Greenwich Meridian. Degrees, minutes, and seconds are utilized for this description.

Refer to a map to obtain the proper longitudes needed to locate a study area.

EXAMPLES

W109-00

W84-30 to 90-15

W176-00 to 176-45

<MEAS PAR>

Measured parameters, as currently used by the Low-Level Radioactive Waste Technology Data Base (Table 9), are processes or factors which either directly or indirectly affect the migration of radionuclides. Only parameters which are represented by numerical data in the document are included in this field. Most of the parameters are hydrological terms because radionuclide migration is facilitated mainly by ground-water. The entire parameter name is written in the input sheet <MEAS PAR> field, and the parameter values are included in the abstract. A semicolon is used between multiple entries.

Table 9. The measured parameters used in the
Low-Level Radioactive Waste Technology Data Base

Calcium Carbonate Content	Leakage Coefficient
Cation Exchange Capacity	Leakage Factor
Clay Content	Leaking Rate
Density	Mean Precipitation
Depth to Water Table	Migration Rate
Dispersion Coefficient (Longitudinal)	Moisture Content
Dispersion Coefficient (Transverse)	Percolation Rate
Distribution Coefficient	Permeability Coefficient
Drawdown	pH
Effective Porosity	Plasticity
Emanation Rate	River Flow
Erosion Rate	Saturation Capacity
Evaporation Rate	Selectivity Coefficient
Exhalation Rate	Specific Yield
Grain Size Distribution	Stack Height
Head	Storage Coefficient
Horizontal Flow Rate	Stratigraphic Unit Thickness
Hydraulic Conductivity	Temperature
Hydraulic Diffusivity	Thickness Of Upper Aquifer
Hydraulic Gradient	Total Cation Concentration
Hydraulic Velocity	Total Organic Carbon Content
Infiltration Rate	Total Porosity
Initial Injection Pressure	Transmissivity
Intrinsic Permeability	Volumetric Water Content
Ion Exchange Capacity	Waste Volume
Leaching Rate	

<MEAS RAD>

The measured radionuclide field was developed for indexing the individual radioactive isotopes of elements for which there is numerical data in the document. Entries are made by writing the chemical symbol of the element, leaving a space, and then writing the atomic mass number (atomic weight) of the isotope. There is no hyphen between the chemical symbol and the mass number. If there is more than one entry in the field, separate the entries by semicolons.

If there are two or more isotopes of the same element described in the paper, or if combined data for two isotopes of the same element are included, each isotope with the chemical symbol is listed separately.

EXAMPLES

Sr 90

Cs 137

Pu 238; Pu 239

<MENTOR>

Indicate the advisor or advisors of a graduate student in this field. Use this field only with thesis documents. The form is the same as for authors.

EXAMPLES

Odum, E.P.

Clebsch, E.E.C.; Reichle, D.E.

<MPN-LOC>

This field designates the mine property number and the location by section, township, range, quadrant, and meridian.

EXAMPLES

000440, S12, T26, R17, Q4, M24

052280, S26, T25, R17, Q4, M24

<N LAT>

The latitude of the north side of the quadrangle or contract survey region is entered in this field. Only whole degrees are used. This field is defined as numeric.

EXAMPLES

38

49

65

C

<NTA>

This is the alphabetic portion of the National Topographic Map Series (NTMS) number utilized for all quads in the lower 48 states. "XX" is used for all Alaskan quadrangles.

EXAMPLES

<u>QUADNAME</u>	<u>NTA</u>
ALBANY	NK
ASHLAND	NL
NCME	XX

<NTN>

This is the numeric portion of the National Topographic Map Series (NTMS) number utilized for all quads in the lower 48 states. The latitude and longitude reading of the NE-corner of each of the Alaskan quadrangles is the <NTN> for all quadrangles in Alaska. This field is defined as numeric.

EXAMPLES

<u>QUADNAME</u>	<u>NTN</u>
ALBANY	186
ASHLAND	156
NOME	65165

<NUM DATA>

This field is used for displaying tables of data. It should not be used for large volumes of data or for data that will be numerically processed; in these situations alternative methods of storing and retrieval should be discussed with the authors. Include in this field any numeric data that will contribute to the description of the document. Such data as concentration of a pollutant, LD₅₀ of toxic substances, or any other numeric data may be recorded. Two other types of information must accompany numerical data: (1) information concerning the circumstances of measurement (vital to proper future use of the data), which is entered in the <ABSTRACT> field; and (2) information describing data sets (including the units of measure and description of format), which is entered in the <DATADESC> field.

The maximum line length in this field is 60 characters, with the last column always containing a character distinct from the rest of the table. If no character logically fills the last column, add a dummy character such as an asterisk or a dash. If the tables of data are to be published in a two-column format, the maximum line length is 48 characters.

EXAMPLES

Calcium = 22 ppm

LD50 = 0.2 g/kg

							<u>Col. 60</u>
ID	O(ppm)	Ca(ppm)	pH	Fe(ppm)	Mg(ppm)	Date	-
N65U	11.14	6.84	6.77	1.01	6.96	16MAR67	-
N65U	4.80	6.32			6.96	12MAR67	-
N65U	11.44	6.52	6.45	1.01	7.76	19MAR67	-
065U	9.50	2.66	6.35	0.42	15.40	20MAR67	-

<OR AVAIL>

The purpose of this field is to enable Oak Ridge area users to obtain copies of the references quickly. This field is used only when ESIC does not retain a copy of the referenced document.

The information entered into this field may range from Environmental Sciences Division researchers to a local library that has a document. Abbreviations may be used to some extent. To show where a document may be purchased, use <AVAIL>.

EXAMPLES

TIC vault

Central Research Library (use call numbers)

TVA library in Knoxville

TVA office in Norris

<ORG>

This field describes the organization responsible for collecting data on the topographic quadrangles for the NURE project. The entries include either DOE or BFEC (Bendix Field Engineering Company).

<PARMLIST>

List the parameters being monitored or varied, such as temperature, rainfall, dew point, etc., and their units of measurement in this field. Include input parameters for a computer program if the abstract describes the program.

EXAMPLES

Leaf temperature in degrees Celsius

Radiation dose in rads

Radiation exposure in Roentgens

Time in minutes

<PRIORITY>

NURE quadrangle investigations are given a priority utilizing a number (one through six) for each quad as indicated by the Grand Junction Office of DOE. These priority numbers are listed in this field.

<PUB DATE>

The date of publication of the document is given in this field.
For most documents, the year is sufficient publication date information.
If additional publication information is necessary, give the year, a comma, the month (spelled out), and, if there is one, the day (in numbers). Separate the day from the month by a space.

For a proposal, use the date as it is submitted to the funding agency.

EXAMPLES

1820, July 12

1941, December 7

1971

1966, August

1976, Summer

<PUB DESC>

This field contains the publication description of a document. If a reference does not fall into one of the following categories, describe it as completely as possible.

Publication descriptions can be used in several ways. For example, an index of the entries in this field can be included in a publication or can be used internally to determine the availability of the cited documents. In addition, the computer can combine the <PUB DESC> field with the <AUTHOR> and <TITLE> fields to produce a format used by journals or other publications.

Use two-letter codes for states for all cities in the United States.

Note: If the total number of pages of a whole document (book, thesis, report, etc.) is important to the data base, separate the total pages from the rest of the publication description by a comma instead of a semicolon.

Books

In entering a reference to an entire book, give the name of the publisher, his location (if multiple locations are given, use only the first address; for publishers with both domestic and foreign locations, use only the first domestic address), a semicolon, and the total number of pages. Enter the title of the book in the <TITLE> field.

In entering a chapter or a section of a book, begin with the title of the entire book (with the article - a, an, or the - suppressed), then give the author or editor (if different from that given in the <AUTHOR> field), a period, the publisher, the publisher's address, the chapter or section number, the partial pages in parentheses, and the total number of pages in the book. The title of the chapter or section will appear in the <TITLE> field.

See the examples below for complete punctuation.

EXAMPLES

Harcourt, Brace and Company, New York City, NY; 440 pp.

Perspectives of Biophysical Ecology, Ecological Studies, 12, D.M. Gates and R.B. Schmerl (Eds.). Springer-Verlag, New York City, NY, Ch. 6, (pp. 87-98), 609 pp.

Physical Climatology. University of Chicago Press, Chicago, IL, (pp. 197-228), 272 pp.

Conferences

The publication descriptions of conferences, workshops, symposia, seminars, panels, etc., are treated in the same way. For brevity, only the term "conference" will be used in this discussion.

Conferences may be divided into two main categories: (1) the title of the publication and the name of the conference are the same, or (2) the title of the publication and the name of the conference are different. The publication descriptions of each type of conference, both for the entire conference and for the citation of a part of a conference, are given below.

When entering a whole conference where the title of the publication and the name of the conference are the same, give the conference number, a semicolon, any other report, series, or symposium numbers (separated by semicolons), a semicolon, the words "Proceedings of a Conference," the location of the conference, the date the conference was held, a period, the publisher, the publisher's address, a semicolon, and the total pages of the document. The title of the publication will appear in the <TITLE> field. (See example 1.)

When entering a whole conference where the title of the publication is different from the name of the conference, give the conference number, a semicolon, any other pertinent numbers, a semicolon, the name of the conference, the words "Proceedings of a Conference," the location of the conference, the date the conference was held, a period, the publisher, the publisher's address, a semicolon, and the total pages of the conference. The title of the publication is entered in the <TITLE> field. (See examples 2 and 3.)

When citing a paper which is part of a conference where the title of the publication and the name of the conference are the same, give the conference number, a semicolon, any other pertinent numbers, a semicolon,

the name of the conference, the editor of the publication (if given), the words "Proceedings of a Conference," the location of the conference, the date the conference was held, a period, the publisher, the publisher's address, the chapter or section number (if applicable), the partial pages in parentheses, and the total pages of the document. The title of the paper or chapter will appear in the <TITLE> field. (See examples 4, 5, and 6.)

When citing a paper which is part of a conference where the title of the publication and the name of the conference are different, give the conference number, a semicolon, any other pertinent numbers, a semicolon, the title of the document, the editor (if given), the words "Proceedings of," the name of the conference, the location of the conference, the date the conference was held, a period, the publisher, the publisher's address, the chapter or section number (if applicable), the partial pages in parentheses, and the total pages of the document. The title of the section or paper will be given in the <TITLE> field. (See example 7.)

If a reference for a conference is incomplete, the necessary information may be obtained from Cathy Fore of the Ecological Sciences Information Center.

For complete punctuation, see the following examples.

EXAMPLES

1. CONF-760316; Proceedings of a Symposium, Vienna, March 29-April 2, 1976. International Atomic Energy Agency, Vienna; 807 pp.
2. CONF-751126; IAEA-SM-202/417; STI/PUB/409; Biological Effects of Low-Level Radiation Pertinent to Man and His Environment, Vol. 2, Proceedings of a Symposium, Chicago, IL, November 3-7, 1975. International Atomic Energy Agency, Vienna; 451 pp.
3. CONF-720510; AEC Symposium Series 30; Twenty-Fourth Brookhaven Symposium in Biology, Proceedings of a Symposium, Upton, NY, May 16-18, 1972. National Technical Information Service, Springfield, VA; 392 pp.

4. CONF-750425; ERDA Symposium Series 40; Thermal Ecology II, G.W. and R.W. McFarlane (Eds.), Proceedings of a Symposium, Augusta, GA, April 2-5, 1975. National Technical Information Service, Springfield, VA, (pp. 3-27), 404 pp.
5. CONF-740346; Advances in Chemistry Series 153; High-Level Radioactive Waste Management, M.H. Campbell (Ed.), Proceedings of a Symposium, Los Angeles, CA, April 1-2, 1974. American Chemical Society, Washington, DC, Ch. 4, (pp. 54-71), 166 pp.
6. CONF-710809; Tritium, A.A. Moghissi and M.W. Carter (Eds.), Proceedings of a Symposium, Las Vegas, NV, August 30-September 2, 1971. Messenger Graphics, Las Vegas, NV, (pp. 471-485), 807 pp.
7. CONF-720510; AEC Symposium Series 30; Carbon and the Biosphere, G.M. Woodwell and E.V. Pecan (Eds.), Proceedings of the 24th Brookhaven Symposium in Biology, Upton, NY, May 16-18, 1972. National Technical Information Service, Springfield, VA, (pp. 32-50), 392 pp.

Journal Articles

Describe the document as completely as possible. Give the name of the journal spelled out in full, the volume number, the issue number in parentheses (if available), a colon, and the first and last pages (if known), as shown below. In some journals, the article is split by pages of advertising, etc. In these cases, include all the relevant pages of the article, separated by commas.

EXAMPLES

American Journal of Physiology 2(4):12-139

American Scientist 65:310-320

Mines Magazine 44(2):107, 109, 124

Reports

Give the report number in full as well as explanatory material on the report, such as "semiannual progress report." Add any additional identifying numbers, if possible. Include the total number of pages (report plus appendices). Separate the elements of the publication

description by semicolons. When entering a part of a report, give the report number, a semicolon, the title of the report, the author or editor, the section or chapter number (if applicable), the partial pages in parentheses, and the total number of pages. In addition, the publisher and the publisher's address should be included when different from the corporate authority. When two or more sections or chapters of a report are abstracted, enter the whole document as well.

EXAMPLES

ORNL/TM-2737; 53 pp.

ORNL/IBP-70-2; 5 pp.

HW-98793; AD-68794; 128 pp.

USGS Circular 255; 28 pp.

USGS Circular 255; Reconnaissance for Radioactive Deposits in the Lower Yukon-Kuskokuvim Highlands Region, Alaska, M.G. White and P.L. Killeen, (pp. 1-15), 28 pp.

Congressional Hearings

When entering a congressional hearing, give the number of the bill or document and the date the hearing was held in the <PUB DESC> field. Enter the committee in the <AUTHOR> field and the title of the hearing in the <TITLE> field.

EXAMPLES

S. 2589, November 8, 1973; 360 pp.

S. 3344, May 15, 1974; 115 pp.

Theses

Thesis information includes the degree awarded, a semicolon, and the total number of pages. Treat a partial thesis like a partial report. Indicate the school or department of the institution awarding the degree in the <CORPAUTH> field. Use the <MENTOR> and <SPONSOR> fields if appropriate.

EXAMPLES

Ph.D. Thesis; 30 pp.

M.S. Thesis; Estimated Corn Yield Changes in the Southern United States
Related to Simulated Carbon Dioxide-Induced Climatic Change, Ch. 3,
(pp. 34-53), 79 pp.

Translations

Include the publication description of both the original and the translated documents, if known. The form should correspond to one of the types given below.

EXAMPLES

Fogg, G.E. (Ed.), English edition, Olivee and Boyd, London; 288 pp.

First published as Dinamika organicheskogo veschestva i biologicheskoy
krugovorot zol'nykh elementov i azota v osnovnykh tipakh rastitel'nosti
zemnogo shchira. Izdatel'stvo Nauka, Moscow, USSR

Radiobiologiya 5(2):600-609; Radiobiology 5(2):333-342

Nippon Genshiryoku Gakki Shi 18(5):304-312; ORNL-TR-4444; 13 pp.

<PVT KWD>

Private keywords are special identifiers that some input teams may wish to use, but that would not generally be understood by others or be useful to others. This field may serve as a testing area for new and different means of identification to be used in the future, while retaining the older system until the old and the new systems can be compared and evaluated. This field is also used to sort the references in the computerized file into subject areas for use in writing reviews.

EXAMPLES

G61

PTG; J.S. Olson

123456; 654321; 4318; 819

ESD #321; NSIC-21

Project #52

<QUADNAME>

The name of the 1° - 2° quadrangle, as specified by the National Topographic Map Series, is given in this field. There are 621 quads in the United States exclusive of Hawaii, and all are input using all upper case letters.

EXAMPLES

CAPE FLATTERY

TALKEENTNA MTS

MC CARTHY

MT MICHELSON

MOAB

<RESTRCTN>

The current security restriction or date of declassification is entered in this field. Classified documents can be referenced and indexed into "open" computerized data bases. The declassified bibliographic data are noted on the input form, keywords and subject categories are added, and the input form is declassified by the ORNL security officer before computer entry.

EXAMPLES

OUO - (Office Use Only)

Declassified June 12, 1950

Secret

<SEC SOUR>

The secondary source field is used to give the location of a reference in an abstract journal. This field has been used as a courtesy to co-workers to help them cross-reference abstracts they have collected. At ESIC, we generally try to obtain the original document and usually do not use the secondary source field.

In the NURE Numeric Data Base, the secondary source field is used to reference the place where a description of a data tape was first found.

EXAMPLES

Bioresearch Index (BIREA), 74, 058303

GRA 74(16) AD-780 297/8

Dissertation Abstracts, 3805-B, pp. 1505-1507, Order No. 72-2566

NURE Numeric File

Kruzas, A.T. (Ed.), Encyclopedia of Information Systems and Services, Anthony T. Kruzas Associates, 1974, Edward Brothers Printing, Ann Arbor, MI.

< LAT >

The latitude of the south side of the quadrangle or contract survey area is given in this field. Only whole degrees are used. This field is defined as numeric.

EXAMPLES

43

65

39

<SPAC>

This is the "spacing in miles" field and is used to indicate the number of miles separating survey lines flown by NURE contractors.

<SPONSOR>

In cases where the funding agency differs from the corporate authority, the <SPONSOR> field is used to name the funding agency.

The following abbreviations may be used: NSF, IAEA, DOE.

EXAMPLES

<CORPAUTH>	Oak Ridge National Laboratory, Oak Ridge, TN
<SPONSOR>	NSF
<CORPAUTH>	University of Tennessee, Department of Microbiology, Knoxville, TN
<SPONSOR>	National Cancer Institute; DOE

<STATE>

This field is used by the NURE project to designate the state where the mine property is located.

<SUBJ CAT>

Subject categories are broad, general descriptors that place a document in its wider field. This field may be used to limit and guide searching. For example, one might use the keyword "litter" in a biological context (a litter of pups), in an ecological context (fallen leaves), or in a solid waste context (discarded material). Assignment and use of subject categories restrict a search to the intended meaning.

A paper may have any number of broad fields assigned to it. Usually there will be two to four. The first category assigned should be the one most closely fitting the purpose of the work reported in the document.

Spell out the names of categories and separate them by a semicolon. Only the first letter of a subject category word is capitalized.

EXAMPLES

Engineering; Pollution Control

Economics; Legal Aspects

Terrestrial; Decomposition

Radiation Effects; Radionuclide Cycling

100

<TAPE NO>

The numbers assigned to each of the tapes of data generated by serial reconnaissance (flyover) missions are entered in this field.

<TAXON>

The scientific names of the plants and animals studied are listed in this field. Use the Latin forms of the genus and species names. Since neither an italic font nor the underline symbol is available, scientific names will be entered into the computer in upper case, with the exception of the abbreviation for species (sp. or spp.). Taxons are separated by semicolons.

Although not all papers will require information in this field, it is important when available. Use only author's identification when given. If you have only the genus and not the species, give the genus alone. If you have only the species, you can usually find the genus through reference books.

The maximum number of taxons which should be used is 20. If there are more than 20 taxons listed in the article, use the <COMMENT> field. Common names for the taxons will frequently be given in the keyword field.

EXAMPLES

QUERCUS ALBA

QUERCUS VELUTINA

ESCHERICHIA COLI; SALMONELLA; CLOSTRIDIUM BOTULINUM

CALAMOSPIZE MELANOCORYS; RHYNCHOPHANES MCCOWNII; EUPODI LUDOVICIANUS

NAVICULA sp.

<TAXON 2>

The taxonomic names of phyla, orders, and families are entered here. This field is used when the genus name is unavailable and the taxonomic name is necessary to properly index the reference.

EXAMPLES

EPHEMEROPTERA

COPEPODA

PERCIFORMES

PERCIDAE

<TITLE>

For topical reports or journal articles, the title is obvious. For books, there may be confusion between titles of various chapters and the title of the book. If documenting a single chapter of a book, give the title of that chapter in the <TITLE> field. Give the title of the book and the chapter numbers in the <PUB DESC> field. If documenting a book in its entirety, give the book title in the <TITLE> field.

Spell out all components of a title. Do not use a dash between a chemical element and its isotope number. All italicized words are capitalized. Capitalize the first letter of all major words.

EXAMPLES

The Environmental Handbook

The Composition of the Soil

Risk of Methylmercury Accumulation in Man and Mammals and the Relation
Between Body Burden of Methylmercury and Toxic Effects

<TYPE>

This field describes the kind of data being entered for input.

EXAMPLES**Tape****Data Center****Data Base**

<W LNG>

The longitude of the west side of the quadrangle or contract survey area is entered here. Only whole degrees are used. This field is defined as numeric.

EXAMPLES

120

76

90

<YEAR>

This field describes the year in which the data center, data base, or tape (from the <TYPE> field descriptors) was established.

APPENDIX 1

RESEARCH IN PROGRESS ON THE LOW-LEVEL RADIOACTIVE
WASTE TECHNOLOGY DATA BASE

This newly-created data base is cross-referenced with the Low-Level Radioactive Waste Technology Data Base. Data fields such as <ABSTRACT>, <KEYWORDS>, and <SUBJ CAT> are used as previously discussed. Data fields unique to this data base are described below:

<u>Identifier</u>	<u>Field</u>
<TITLE>	<u>Title</u> - contains the title of the project
<ACT NO>	<u>Budget activity number</u>
<SITE>	<u>Site</u> - location where analyses are being done
<PC>	<u>Person in charge</u>
<PI>	<u>Principal investigator</u>
<CONT>	<u>Contractor</u> - organization responsible for project
<LOC>	<u>Location</u> - field area where actual work is done
<MY>	<u>Man-years</u>
<TECH>	<u>Technology</u> - type of waste technology
<FU>	<u>Funding</u> - total costs (in thousands of dollars)
<NO>	<u>Number</u> - 189-number
<BC>	<u>Budget category</u> - continually funded or new project
<DV>	<u>Funding agency</u>

REFERENCES

1. Biosystematic code. 1968. Biosciences Information Service of Biological Abstracts. Philadelphia, Pa. 27 pp.
2. Brooks, A. A. 1970. ADSEP -- an automated data set editing program. CXC-34. Oak Ridge National Laboratory, Oak Ridge, Tenn.
3. Brooks, A. A. 1971. ADSEP text input. ORNL-CF-71-9-3. Oak Ridge National Laboratory, Oak Ridge, Tenn.
4. COSATI subject category list. 1965. Defense Documentation Center, Defense Supply Agency. AD-624000. Department of Defense, Washington, D.C. 69 pp.
5. Council of biology editors style manual. 1972. Committee on form and style, 3rd ed. American Institute of Biological Sciences, Washington, D.C. pp. 154-157.
6. Cross code. 1968. Biosciences Information Service of Biological Abstracts. Philadelphia, Pa. 26 pp.
7. Energy information data base for serial titles. 1978. TID-4579-R10. U.S. Department of Energy, Washington, D.C. Available from NTIS, Springfield, Va.
8. Environmental/biomedical terminology index. 1976. ORNL/EIS-98. Oak Ridge National Laboratory, Oak Ridge, Tenn. Available from NTIS, Springfield, Va.