Unclassified

ENVIRONMENTAL IMPACT STATEMENT

CLEANUP, REHABILITATION, RESETTLEMENT OF ENEWETAK ATOLL — MARSHALL ISLANDS

APRIL 1975

DEFENSE NUCLEAR AGENCY
Washington, D.C. 20305

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KOKADRURU IN KEMLELE (EIS) EO KIN WAWIN AN KARREO, EKKAL IM KAARMIJE ENEWETAK ILO MARSHALL ISLANDS

NAN IN KEMLELE

Pepa in ej kokadruru in kemlele (EIS) eo an juon project in kareoik im kaarmije ailin in Enewetak in. Kokadruru in ar komman bwe en bidrodro ukote non kajin eo an armij in Enewetak. Non bok melele ko rellap lok, juon ej aikuij in eleke im lale book eo na etan EIS. Project in jej lemake, Defense Nuclear Agency enaj kommane ilo etan ibben-dron eo an Department ko an Defense im Interior. Defense Nuclear Agency ej e eo elap wot kunan ilo kommane pepa in im ar koba lok ibben Office eo an Territorial Affairs ilo Department eo an Interior ilo an kar komadmedre.

MELELE KO IM KOTTOBAR EO AN PROGRAM IN ILO PEPA IN

Armij in Enewetak rar emakit jen ailin en air ilo 1947 eo bwe ene ko eneir ren kar jerbal non kokmelmeli kein tarinae ko rokajur. Armij rein rar emakit im ilok non ailin in Ujelang, eo im edrik lok melan im loan jen Enewetak in. Ilo April in 1972, High Commissioner Edward E. Johnston im Ambassador Franklin Haydn Williams, eo im ej dri jilek eo makmake an President en an United States non konono ko kin kien eo an Micronesia ilju im jeklaj, rar jimor kwalok bwe United States ebokaj in korrol Enewetak non Government eo an Trust Territory ilo jemlok in 1973, im kotmene bwe elkin wot inem armij enaj jeblak none.

Elkin an walok nan in, elon survey ko rar komman non wate belakin eo an ailin in ikijien menin kautata im baijin in bomb. Elon konono ko rar komman ibben armij in Enewetak non kalikar konan ko air ikijien air kojerbal bwirej, ia ko en jutak imon jokwe im moko an jikin kwelok eo, aikuij ko non kojerbal moko im reber rainin, im non lomake karok economic development eo an ailin in. Survey kein im konono kein rar komaron, ilo juon wawin, plan e bedbed eo an program eo im konono kake ijin.

EIS in eotak jen an ekka air komman elane ej iten ijino juon program. Ilo tu jejet in, elane ej wor EIS ej kin juon project eo non kalok ak kajutak juon men ion juon jikin eo ejain kar jerbal mokta. Ilo an wor menin, rej maron in etali nana ko an project eo im bauni ibben emmon ko an ilo air jelet melan eo an jikin eo. Elane elap wot emmon jen nana, inem project eo ej weppen.

Program in im lomake non Enewetak, eoktak. Einwot in, bwe, wawin ko im jej watok bwe renaj jelet belakin en an ailin en, emoj dre air walok. Ion ene kan, elon men rej jebleklek ion melaj im jet jikin ewor mottan baijin in bomb ie. Program in im ej lomnak in komman ej bwe en jolok nana kan im rejelet belakin en an ailin in im keboje non an rol armij none. Kij woj jela bwe makitkit ko an jerbal in karreo en enaj komakit elon wawin ko renaj jelet belakin im melan ailin in. Kin wawin in, ejjab bwe report in en konono wot kin wawin an makitkit ko an program in naj jelet melan en an ailin in ilo ar kedri emmon im nana ko an ikijien drettan baijin in bomb ion ailin in, ak bareinwot ta eo enaj walok elane program in ejab kommon.

MOTTON KO ILO PROJECT IN

Jibarbar im kottobar eo elap an program in ej bwe en keboj ailin in non an armij rol non ene ko ie ilo juon ien eo ejjab too kitien. Kin menin, ilo lomnake kakke jerramon non armij, emmonlok in jerbal in kien, im wawin an armij mour, ej aikuij bwe program in karreo im kalok ailin in ren komman ilo juon wot ien. Inem bwe en melele ta in jej konono kake, jenaj kojbel project in ilo emen mottan ko ilo wawin air naj jerbal jen dron eniwot in:

Mottan 1 - Karreo

Mottan in ej kin komakiti men ko rej jebleklek bajjok, moko, im bwirej ko renaj menin kautata non jukjuk in bed an armij. Ej bareinwot kitbuj wawin karok ko im emoj karoki non bobrae en ejerwawa mour an armij noni. (Mottan in Kunan Department eo an Defense.)

Mottan 2 - Ekkal

Mottan in ej ikijien menin jerramon ko im jukjuk in bed ko an armij einwot, ekkal imon jokwe im moko jet, im kalbwin ailin in kin ni im kan ko renaj kowalok mona bwe en maron naj jeblak armij in Enewetak none. (Mottan in Kunan Department eo an Interior.)

Mottan 3 - Kaarmije Ailin In

Mottan in non kaarmije Enewetak in enaj komman kitien elkin an drerelok kareoik ene ko ie im emoj an alikar bwe ejelok baijin non an armij jokwe ie. Elkin wot inem mon jokwe ko renaj ekkal im armij in Enewetak renaj jokwe ie im jino air kalbwin ene ko eneir. Ej mour eo an armij in ailin ilo mottan jab in enaj aikuij bwe en wor buruwot juon kin kakien ko non kojbarok bwe mour eo an armij ion ene kein en lor karok ko ilo Task Group Report eo. Mene ewor lomnak bwe ro iuan

Planning Council eo renaj jokwe ilo mon kobber ko ion Japtan im jerbal ilo program in karreo eo im ko jet tokelik, ilo kotmane ke ejolok baijin im remaron jokwe ie, air jokwe im ber ijin ak jejab watoke bwe ej mottan wot Mottan eo non Kaarmije ailin en (Kunan Department eo an Interior.)

Mottan 4 - Kommani Karok Ko Non Menin Wonmanlok

Mene ejolok karok bwe mottan in ej iuwan lok wot program in im konono kake ak ekkar bwe mottan in kein ka-emen en wor konono kake ijin. Mottan jab in enaj elkin wot karreo, ekkal im kaarmije ailin in im ej kin karok menin wonmanlok ko im enaj too ameni, im ejakin mour ion ene ko ie. Karok ko rar komman bwe armij ren aikuij lori ekkar non recommendation ko an AEC rej iuan wot mottan in. (Kunan Department eo an Interior.) Jet bareinwot katak ko kin ukuktak in jonan baijin ilbwiljin armij ro im melan eo air renaj komman elane eaikuij bwe en wor. (Kunan ERDA einwot AEC)

KORKAN MARON KO

Jilu ra ko ran government rar ibben dron ilo ien kokemelmel ko ion Enewetak im ien ko elkin kokemelmel kein im kio renaj bok kunair ilo plan e kareoiki, kaloke, im kaarmije ailin in.

Ilo 1946 eo, Government eo an United States ar boke Enewetak jen kien eo an Trust Territory of the Pacific Islands bwe en jikin an kokemelmel nuclear bomb ko. Emoj jitone Department eo an Defense bwe en bok edro in kareoik ailin in non an armij maron in jokwe ie.

Energy Research im Development Administration eo an United States (ERDA einwot AEC) ar bok edro in kakabiloklek ikijien program in kokemelmele nuclear bomb ko. Ejja ilo nememe in wot, ERDA (AEC) ej kunan keboji melele ko im naj an jerbal kokabiloklek kin baijin in bomb ilo aolep wawin, jab ilo plan e wot mottan ko ilo program in karreo en wot, ak ilo komakitkit mottan kein bareinwot. ERDA enaj bareinwot kunan kommane katak ko elkin ien in im tokelik kin baijin in ailin in.

Department eo an Interior (DOI) ikijien an wor an maron in lale Marshall Islands jen kitien government eo an Trust Territory of the Pacific Islands (TTPI), enaj kunan bok edro in kejbarok armij in Enewetak. Ra jab in DOI, enaj edro in lomake kaarmije ailin in, im komman kitien kakien ko non kejbarok ejmour an armij ie.

Ra kein, DOD, ERDA, DOI im TTPI rar bok jitok kabel ko an armij in Enewetak ilo aolep wawin ko non keboj rol eo aer non ailin in Enewetak in.

NEMEME IN MELAN AILIN IN IM DRELBEN BAIJIN IE

Nememein ailin in ekajjo jen ene non ene. Jet ene einwot Enewetak im Medren, elon em ellap ie einwot kein, warehouse, mon jerbal ko im mon jokwe. Ilo Enewetak en, ewor juon jikin jok-im-kellok an balun, juon miadri im jikin ko non an balun park im ekto-ektak. Ion ko jet, elon moko im rekanuij in mor, mottan mel ko, jakboj ko jet, ial ko romarre, im jet ejelok men kein ie. Enanin aolep ene im marre. Jet ian ene ko tu-ion, jokjokir euktak jen mokta itok wot jen kokemelmel nuclear bomb ko ie, im jet rejako rainin. Map in lo page in tok juon ej kwalok nememein ailin in Enewetak in rainin. Ijoko im ar komman kokemelmel ko ie etair kajojo rej alikar kin made im bok ilo map in. Map in ej etal wot im kalikar bwe kokemelmel ko rellap rar komman ion ak iturin Enjebi im ene ko tu-ion tu-rilik, im bareinwot ion Aomon im Runit.

Nemenein ko an Melan

Section kein ilol rej kwalok nememe eo an belakin en an ailin in.

Menin Edrok - Enanin aolep ene im libobo kin mar, wojke, im mar ko rej tobalbal. Jet wot ene rejjab kanuij in marmar einwot Aomon, eo im emajaj enanin aolepen. Ewor ni ko rej edrok ion tarrin jonoul-lalim ene ko, im bob, ion wot jet.

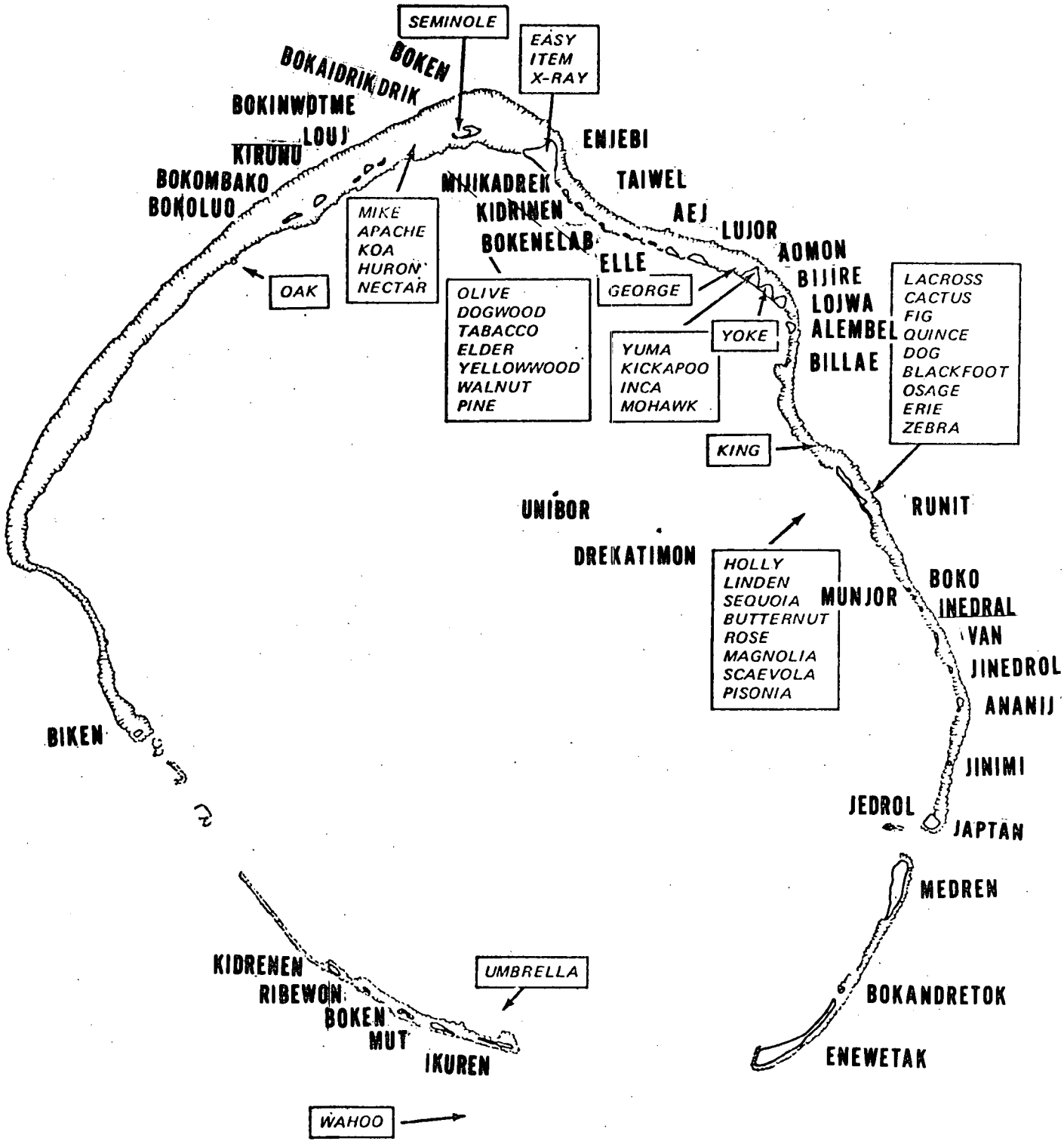
Menin Mour - Menin mour ko elap tokjeir non armij in Enewetak rej ik, mona in lojet ko rej ber lik im ar, baruleb im bao in mejatoto ko rej lik ailin in. Men kein ik im bao elap air lon im ejelok juon kain iair ewor ad jela bwe ejako kin wot program in kokemelmel eo. Ilo bar juon wawin, jemaron in ba bwe dri ailin in renaj lo bwe ejelok oktak an menin mour jen yio eo 1947.

Dren in Lol

Enewetak ej aikuij wot in kojerbal dren in wot. Unin, kin an bwirej en ie kabokbok im ekomman an dren makaj an drubik bwirej ne ej wot im bed ion bar iumin lol in ene ko ie. Ilo an dren in bed ijin im ekiki, tokelik ej koba ibben dren in lojet eo ibelakin im komman bwe en kolaebar. Ion jet ian ene ko emoj lo bwe emmon dren in lolier, dren kein remaron jerbal non aikuij ko jet. Dren ko im rej ettein ilo nien dren im aibuj cement jen likin em renaj emmon non komat im idrak.

Moko, Ial ko, im Menin Ekkal ko jet

Jonan kar ekkal ion ailin in ear jab jonan wot juon - jet ene ear lap im jet edrik. Non rainin, jet ian mokein rej emman wot, ak jet emat aer ran. Elon moko, bedbed cement ko im men ko jet ewor mottan baijin in bomb ie. Ko ian men kein im remenin kautata renaj jako. Moko, tank ko, miadri ko, ob ko, im men ko jet ellap aer mor, renaj rubi im



IJOKO AR KOMMAN KOKEMELMEL KO IE
ILO ENEWETAK IN

jaberwot mottan men kein ko im rokkar non kalok camp eo an program in karreo eo, im non an dri Enewetak kojerbali, renaj bed; ko elap air mor, renaj julok. Ial ko ion Enewetak in rej emmon wot im ko ion ene ko jet elap air mare im rejjab maron in jerbal.

Menoknok Bajjok

Elap wot ian mottan menoknok ko bajjok ion melaj in ailin in ejelok baijin ie. Men ko im emoj kalikari bwe rejjab baijin ej errein:

- Em cement ko im rej romlok wot, bedbed cement ko, imon ko ko, abar ko toreren ene, im bedbed ko rar ekkal.

- Jeen ko komman jen jitul, cable, pipe, worwor aen ko, miadri ko jikin pijaik an rub bomb, wall ko rej komman non bobrae an no kan jabon juon mejje, mottan radar ko, tank im nien dren ko jet.

- Em ra ko ellap air kot, wan jodrik, baru bwa, rab, im miadri alal.

- Elon wot ian men kein rej ejebleklek bajjok imelan ene ko ijowotke, jet ian ene kein ejab labinwot ko jet. Non wonjonak, ilo Jinimi, ejelok menoknok bajjok ie, ak Medren, ekwe enanin aolep menoknok kein ie rej jimettan in menoknok ko bajjok im mottan cement ko ilo ailin in im ejelok baijin ie.

Wawin ko ewor baijin in bomb ie

Section kein imanlok rej kwalok nememe eo an melan ailin in, ene, minin edrok, menin mour, dren im men ko eltan pein armij. Unin konono eo an section in ej non kwalok ta ear walok non men kein kobban ailin in im rar baijin elkin kommani kokemelmel ko. Un eo juon ej bwe en kwolak ta malkan baijin in jen bomb enaj walok non armij ro renaj bed im amnak ion ailin in.

Kain Men Ko Ewor Baijin Ie - Men ko im ewor baijin in bomb ie ion ailin in Enewetak rar jebar jen kokemelmel in nuclear bomb ko im rar komman jen yio eo 1948 mantak non 1958 eo. Men kein rej lajrak ilo jilu wawin ko:

- Men ko rebaijin im rar jab "bwil" im mat ilo ien an bokkulok im ebjek juon nuclear bomb. Kain men in, ilo wanjonak, ej einwot bwe in kane ko im rar jab bwil im mat ilo juon kijiek. Plutonium ej juon ian kain men kein im ekka ion ene kein.

- Men ko rebaijin im rar ejak jen rub-im-ebjak in juon bomb jen an aer menin bokkolok ko iloan. Kain men kein, ilo wanjonak, rej einwot melle in juon kijiek im rejanin med.

- Men ko rebaijin im rej ejak jen air ebake men ko im ewor baijin in bomb ie. Kain men in ekoba mel ko im mottan kobwebwen kein jerbal in kokemelmel ko, im jet ian chemical element (on ko iloan bwirej) ko ilo bwirej.

Wawin an men kein rebaijin jelet kajojo mottan ailin in im bareinwot men in mour ko, naj tilmake ijin ilol.

Survey in Etale Jonan An Baijin Ailin in Enewetak - Ilo jemlok in yio eo 1972 im jino in 1973 eo, AEC ar komman juon survey in katak kin ewi jonan baijin in bomb ion ailin Enewetak in. Jen survey in ar alikar bwe ewor baijin in bomb ilo bwirej in ene ko, ilo kabin lomolo en, ilo mar im wojke ko, im ilo kanniek in bao im ik. Dretten baijin ilo ene ko ion (jen Bokoluo non Runit) ar kanuij lab ie, im kio ej lab wot, jen ene ko irok (jen Bokko non Kidrenen). Unin an eindrein jemaron ba kinke, einwot ar lo ilo map in ailin in, elon wot ian kokemelmel ko rar komman tu-ion in ailin in (elab tata ion-rear) jen turok en.

Bwirej - Survey eo ar bareinwot kalikar bwe ekajojo jonan baijin in bomb en jen jikin non jikin ilo juon ene, im jen ene non ene. Survey in kin bwirej ar komman ilo ruo wawin ko. Wawin eo mokta ar kin kein jerbal ko im rej ektaki ilo helicopter ko im kelok kaki ion ene ko, ne ejab, ekwe armij ej boki kein jerbal kein ibbeir im etalal kaki. Wawin eo kein ka-ruo, rar ebbok jambol in bwirej jen kajojo jikin ilo ene ko. Inem, rar etale jambol kein ilo laboratory non bukot kain baijin ko im jonair. Jen wawin kabuk kein, ar alikar bwe ene ko im elab tata air jorren jen baijin rej Runit, Enjebi, Aomon im Eleleron. Runit ar kanuij alikar bwe elap an jorren jen aolep.

Juon ian men ko im ej kibel jonan baijin in bomb ilo juon jikin ilo juon ene ej jonan an mare ijo im rar bok jambol in bwirej ko jene. Ijoko romarmar im lon wojke ko ie ear walok an lab level in baijin ie jen ijoko romajaj. Ion kabbe ko ej ijoko im edrik tata baijin ie. Unin an eindrein ej kin makitkit an koto, wot im no ko ilo air lilikilok men drikrik ko rebaijin jen ilo bwirej eo.

Dren in Iar im Lik

Baijin in bomb ilomalo eo ej jebar jen an baijin eo beto-betak ikotan ene ko im kobalok ibben ijo ej itok jen kibin malo in ailin in. Baijin eo ilo dren in lik, eo im ekanuij in drik, ej bareinwot walok jen

an dren in wot ak no kwol berejit in ene ko. AEC ar lo bwe level in baijin in bomb ilo dren in ejjab kajur non jonan kautata. Ilo dren in lik, level eo ie ebar einwot mojno. Enaj wor ien jone level in baijin eo ilo dren in lol.

Menin Edrok ko im Menin Mour ko - Menin edrok ion aolep ene ko jen Bokoluo ion im ilok non Runit irear, elab an kajur jonan baijin ie. Jonan ko rokajur tata rar loi rej ilo menin edrek ion Boken, Enjebi, im Runit. Ejja drettan drein wot ar walok ilo kan ene kein ilol:

Bokoluo	Elle
Kirunu	Lujor
Bokenelab	Eleleron
Lojwa	Bijire

Ene ko jen Ikuren non Kidrenen ar bar einwot alikar an lab drettan ko ilo kair jen air elolo ilo kaan menin edrik kein ilo ailin ko jet.

Rar bar elolo mottan baijin in bomb ilo kaan ene ko, kobalok ni ko im bob ko. Ijoko ilo men kein im rej menin mona elab lomnak kaki kinke ilo ad kani men kein ej komman bwe juon en bomb. Ejja ilo wawin in wot rar lo bwe juon ej bar einwot bomb jen mar im wojke ko mene ejelok mottair ekkar non mona.

Jonan baijin in bomb ilo bao ej ettor einwot jellen level in baijin in bukon eo ilo ailin in im bao ko rej lik ie. Non komlele iki, mottan enbwinnin bao ko im rar komman jambol jeni, einwot kanniek ko im aj ko, ilo men kein rar lo kajur lok in baijin ilo bao ko im jikin air lik ej ene ko ion, jen ejja kain bao kein wot im rej lik ene ko irok. Ejja wawin in wot ar walok ilo baruleb, ijoke ar lon wot bao non katak kake jen baruleb. Emoj bareinwot lo bwe level in baijin ilo baruleb ekka an lablok wot, lablok wot, kin air kane kilier elkin air worjeb. Elon jambol ko kin ik rar kakoleni, ijoke rejjab kwalok an lab kajur in baijin ko ie non kakure armij elkin air boki ilo enbwinnier.

Menoknok Bajjok Ko Rebainjin - Menoknok bajjok ko im mottan mel ko rebainjin ewor ion elon ian ene ko. Men kein jemaron lo ilo nememe in menin ekkal ko rej jutak, mottan mel ko im kajojo size, ilo ejoj ak ilo aer moke lok iaer melan juon ene. Jet ian men in ekkal ko ion Aomon rebaijin kin plutonium. Ene ko im elab an lon menoknok bajjok ko rebaijin ie rej Enjebi, Aomon im Runit.

Baijjin in bomb im Armij

Elap ar inebata kake an wor baijin in bomb ilo bwirej, dren, menin edrik ko im menin mour ko kin an baijin in naj jelet armij ro rej mour ion ene kein. Malkan baijin ej naninmij, ne jab, inem mij. Ijelokin wot ijoko im elab air "bomb" enanin aolep belakin ailin in im drik level in baijin en ie. Ilo ien enaj wor jorren jen baijin kein, elab wot air naj jelet ninnin ro, ajiri ro, im kora borroro jen ro jet. Ijoke, ejamin ekka an wor jorren ko rellab elane jenaj kardik jerwawa non baijin kein.

An armij bok baijin in bomb ej lo ruo wawin ko: juon jen air jokwe ilo jikin ko ewor baijin ie im ruo, jen air mona mottan mona ko rebaijin. Wawin in mokta ej walok jen an enbwin eo jerwawa non bwirej ko ewor baijin ie. Bar juon bwe, jikin ko im ewor baijin eo plutonium ie, elane elab an enbwin eo ejerwawa none inem elab an kautata kinke jej mononoik men in non arir. Ebbok baijin jen mona ejjab walok wot jen ad ilok non ene ko ewor baijin ie ak ej bareinwot jen an itok mona ko jeni. Elane eindrein, inem mene ejelok ad maron in bobrae armij in Enewetak jen air jerwawa non menin baijin kein ak jemaron kadrik lok level in baijin eo renaj ejerwawa ie bwe en ejelok ak drik ad uata kin ejmour eo air.

Ejjab bolel ad melele kin jorren ko baijin in bomb remaron komman non enbwinnin armij. Ijoke, ebwe ad iminene im jela kin wawin ko non kadrik lok an armij bok baijin ne rej jerwawa non ray in baijin in bomb ko jejab maron loi im men ko jet rebaijin rej jebar jeni. Kemlet in iminene kein ej alikar ilo jemlokin lok report in.

Ilo an wojke kein ni, bob, ak ma mour im edrok, rej bok kijier jen bwirej. Wawin in ej komman bwe wojke kein ren jeromi baijin in jen bwirej kin okar ko im jilkin linlok ilo kan eo non men ko lier, inem ilo an armij kani ak ilimi dren ko ie, rej bok baijin in bomb in non enbwinnier. Jidrik in baijin in ej ilok non dri, im eo jimettan non kaniek. Im ilo an akiki im lablok, elaplok uata kin naninmij, ijoke, an kautata wot ne elap an kar juon boke.

Ejja ilo wawin in wot, jej maron in lo wawin an pig, bao im baru mour im bok baijin jen air kani mona ko jen jikin ko rebaijin. Mene juon wot allen bok ni, ma, jalele ak baru ko rebaijin im drik non aer kwalok jorren ellab non mottan ko ilo enbwin, ak baijin in bomb kein renaj lablok wot ien otemjej jej mona. Kokan kein rebaijin renaj ae ilo enbwinnir mae juon ien enaj ilok im kokure ad mour. Unin in ad ban maron kejerbal mona ak waini eo ej walok jen ene kein iumin naj elon yio.

Jonan Baijin Ilo Ene Ko Kajojo

Enjebi. Jonan lon en an men baijin ilo bwirej en Enjebi remaron kwalok elab jorren non dri Enjebi ilo air bok jidrik jidrik jen an enbwinier jerwawa non baijin in bomb ko ilo bwirej eo, im jen air bok mottan mona jen men ko renaj lomnak in kalbuini im tebi ion bwirej eo im ebaijin einwot kein, bob, ma, makmok, pig im bao. Jonan im drettan baijin eo im juon enaj boke jen an bed im jokwe, im jen an mona len ken ko rej edrok ion Enjebi enaj tarjen jonan an lab jen drettan ko emoj loi bwe rekkar non enbwinnin armij. Kin wot un in, emoj an AEC kakol bwe dri Enjebi ren ja jab kojerbal Enjebi kio non jikin air bed im jokwe, ak jerbal in atteke ion. Ewor jilu test in nuclear bomb ko rar komman ion ene in im ebar lon men ko rellab lok rar rubi jet wot mile jen ene in. Men in ar komman bwe en lab an Enjebi baijin jen ene ko jet iloan ailin in. Juon armij eo im enaj too an bed im jokwe ion ene in, ilo wawin in an kio, enaj tarjen jonan baijin eo enbwinnin jen drettan ko AEC ar karoki ekkar non kajur an armij. Non elji, juon armij eo im enaj jokwe wot ion Enjebi, im elap tata bwe ej bok wot kijen jene, emaron wor jorren elap ewalok none jen wot an jerwawa enbwinnin non baijin.

Kin menin, elane dri Enjebi rej lomnak in rol non Enjebi en, ewor ruo aban ko re walok - air jerwawa non baijin, im mona mona ko rebaijin. Aban eo ikijien boktok mona ko ejelok baijin ie jenaj marone jidrik wot ien einwot ke mona kein renaj itok non Enjebi jen ene ko ak ailin ko jet. Wawin bokto-boktak mona in non dri Enjebi enaj komman bwe ren bok wot kijier jen ken ene ko jet bwe ik ko wot rej ewoniri iaar im lik remaron kani. Ijoke, elane ebaj ettor im aban im jab tobrak boktok mona non Enjebi, armij ro rej jokwe ion Enjebi renaj ion nita bwe ejelok mona ko rejjab baijin.

Aban eo elap tata ej kin wawin komakiti men ko ewor baijin in bomb ie. Jimettan in jerbal in emaron in naj tobrak ilo ien karreo en bwe nanin aolepen moko rebaijin, kobej, im menoknok ko jet renaj jako. Ijoke, bwe jen maron in kajion kommane bwe Enjebi en bar ekkar non jokwe ie im ekkat ni ie ak bob im mona ko jet, men eo moktata ej aikuij Komman ej enin bwe aolepen bwirej en ion enen en jako. Kol jab in ejamin naj bwe kinke non ad maron tobar level eo jej jibadrek ijin, jenaj bar aikuij in kirij lok aolepen bok im dreka eo ibulon bwirej in ene in. Bwe jen lukun jela ke ejelok jabrewot baijin en emaron in naj drelon ilo okar in wojke ko renaj edrok, bok im dreka rej aikuij in naj likit ilo juon jikin eo emwilal lok jen ijoko okar in ni, bob, ak ma rej tobare, eniwot ad kar komeleleik lok mokta ke keinikkan kein rej jorom inier jen bulon bwirej. Einwot ba, jenaj aikuij in jolok nanin aolepen baijin in bomb eo okar kein remaron in naj unuri. Elkin jolok men kein, bwirej kaal ko im rerreo im ejelok bar jabrewot men in mour ie, jenaj aikuij in boki tok jen ene ko jet, ak jen America.

Elan jenaj boktok bwirej kaal, ej aikuij in bwe non an kalbubuik aolepen ialan okar ko an jabrewot keinikkan ion ene in. Bar juon, aolepen bwirej in ej aikuij in naj karreo (sterilize) mokta jen ad boktok non ailin in. Jonan naj jerbal in enaj kanuij in ambak im bin komadredre. Men eo juon, im men eo e aurok tata in, jej jamin lukun jela elane jerbal rot in emaron tobrak bwe ejanin wor en enanin kar wojak men in jolok bwirej im bar jian ron kan kin bwirej kaal. Men in enaj juon jerbal eo ekauatata im bin kommane elane jej lemnak in lukun jolok jen enbwin ene in bwe jen kadriklok an baijin in bomb ak jejab jela elane enaj tobrak jubarbar in ad, enin bwe jen maron in bar kallib ion. Ilo bar juon wawin, elane jar kotlok bwe en make makwinlok baijin in ion ene in ilo an kotlok im likliklok ibulen bwirej lok, juon ran ene in emaron in bar emman non an armij jokwe ie. Kio, e alikkar bwe enaj kanuij in too bwe en jako an ene in baijin im ejekkar an armij mour ie. Lemnak eo in kio ej bwe jen komakit wot kubijin bomb im menoknok ko jet ion ene in.

Japtan - Emoj karok bwe Council eo im dri Enewetak ro 50 jima im renaj bok konair ilo program in karreo in ren jokwe ion Japtan ilo katan jidrik in. Lemnak eo in kio bwe Japtan im jidrik in Medren ren ja naj jikin dri Enjebi ro. Ilo rainin, elab an lon em ion Japtan en. Elab an bar lon mottan kobejin in mal im menoknok ko jet ion bedbed itererein ene in im ibelakin. Nanin aolepen mottan mal ko rej komenoknok iturin ene in rej mottan wa eo ear eotok ijen, im enen wot ijen ej morlok na ie. Ej wor wot kar mottan plantation in ni eo an kar dri Germany ro ion ene in ijoke kio elab an bar edrok mar im wojke ko jet im tu rear in ene in ebaj tar jen jonan an marmar.

Jemaron in naj rakij nanin aolepen menoknok kein im rekaban jikin ekkal em, atake, ak jikin ekkat ko. Jet ian moko ijen renaj bar aikuij in jako im ko wot jej aikuiji renaj bed wot.

Medren - Medren ekanuij in lab an etton im menoknok bwe nanin jimettan in aoleb kobej in mel im cement ko im rejjab baijin rebed ion ene in. Jemaron kareoik im jokbeje men kein rej komonoknok ene in im na jikin an jet dri Enjebi im dri Enewetak jokwe ijen.

Wawin kejerbal bwirej eo ion Medren enaj jejjet einwot Master Plan en. Jikin kwelok eo an dri Enjebi emaron in naj jutak ijo wot armij ro rekalet e.

Enewetak - Emoj bebe bwe Enewetak en ijo im dri Enewetak ren jokwe ie im ijo jikin kwelok eo aer en bed ie. Remaron in komman aer atake bajjek im bareinwot ekkat ni ijin. Ilo rainin, ekanuij in lon em ko rellab im kein jerbal ko jet ion ene in. Elon ian mokein rar baj kejbaroki wot

mantak im rej bwe wot aer emman. Em ko jet renaj bar kokaal i non an dri jerbal ro ilo program in karreo eo jokwe ie. Elon em ko, bedbed cement ko, im bar men ko jet rej jutak renaj aikuij in jako non ad na jikin imon armij im jikin aer ekkat. Jikin balun eo, im ej tarrin jimettan in ene in enaj bed wot. Ial an balun ko tartotak im jikin aer park ekanuij in lab tokjen non jikin jok in im emman elane jenaj bar lemnak in likit wot men kein. Ejjab kanuij in lon wojke im mar ko jet imelan ene in, ijo dre in ewor kaan ej itulik im kab tuion in ene in. Nanin aolepen mar kein renaj jako ijelokin wot ko jej aikuiji non jalitak im ijekein jet jemaron in naj keboji non jikin kallib.

Runit - Runit ej eneo im ear wor jet bomb ko rakkajur rar rubi ie, im rar bar kejerbale non jikin dri jerbal iumin jidrik ien. Ewor ruo ron ellab jenkwan kar bomb ko ie, im ekanuij in menoknok ion bedbed kin mottan mel, cement, im kein jerbal ko rar mor lok na ijen. Juon jikin jok edrik, juon kar ron in ko, juon miadri ebojak in okjak, kar mottan juon ob, im elon kar teaj im wa rot kein rej morlok ion ibbe, rej bed ejja ilo ene in wot. Ilo Master Plan eo emoj kar kwalok bwe ene in en kar enen kowainini. Jen wot kar test in bomb ko ilo ene in, rajet in ene in tu ion elab an baijin in bomb im labtata plutonium, juon mel eo ekilidreb an baijin im eto an jako. Air Force ear kemo an armij ilok non ene in ilo 1972 bwe en jab wor jorren non ro rej ilok none. Ejelok en emaron in naj ilok non Runit elane ejjab loor jet rule in kejbarok enbwinnin. Kin wot baijin kein ijen, im kinke ejjab bwe ad jela kin jorren ko renaj kwaloki, enaj komman juon team jen ro rekabel ilo men kein bwe ren kwalok ta eo emman jemaron in kommane kin baijin kein ilo Runit. Ak non ad maron in plan e, baijin kein ion Runit renaj kalbini ilo juon ian kar ron in bomb kan ibben kubijin bomb ko jet im bwirej ko rebaijin kin plutonium jen ene ko jet, im men in jenaj komeleleiki ilo page kein tok lal.

KARREO IM KAARMIJE ENEWETAK

Planning Council Eo

Planning Council eo an Enewetak ear jebar jen armij ro im rar lelek maron none bwe en komman bebe, ekkar non jonak ko armij rar lilok, ikijien naj plan ko an ailin in non ran kein re-ebak im non tokelik. Emoj kar kejerbal jet ri-kabileklek ro bwe ren jiban Council eo kommane plan kein non jukjuk in bed in. Ri-kabileklek rein renaj wonmanlok wot im jerbal ibben Council eo im armij ro ikijien jerbal in ekkat, ekkal, ilo keboj economy eo an ailin in, im ilo bar men ko jet elane ewor aikuij ikijier, ilo kotaan in im project in jej bebe kake enaj wonmanlok.

Dri Enewetak in emoj aer kwalok ruo aer konan ikijien men ko rej aikuij in tobrak moktata non dri ailin in. Juon bwe en mokajkaj an armij roltok non ailin in, im bwe en wor mweir, im aikuij ko jet aer, im bwe en wor kijier ilo ien in ailin in ejjab maron in naj na kijier. Konan eo juon ej ikijien plan ko non tokelik ko im remaron in naj komman bwe ilo aer mour i ailin in remaron in naj boktok aikuij ko aer jen likin im ukot lok kin men ko remaron in naj kwalok jen ailin in.

Kejerbal Bwirej

Ewor jilu class ko emoj likit aolepen ene kein ilo ailin in na ie. Juon class, ak kelajrak, ej ene ko naj enen jokwe im ekkat kijen dri ailin in. Eo kein karuo, ej ene ko naj enen kowainini, im eo kein kajilu, ej ene ko naj enen kakijen bajjok im enwor, im bareinwot non ikkure ak mejatoto bajjok. Dri Enewetak ro ion Ujelang rar kwalok bwe ene ko rar kaleti non kajojo ian lajrak kein ej einwot in:

Non Jokwe im Atake Bajjok

Enjebi	Medren	Enewetak	Japtan

Non Kowainini im Jerbal in Kallib ko Rellab

Alembel	Lojwa	Aomon	Bijire
Aej	Ananij	Lujor	Runit

Non Kakijen im Jambo Bajjok

Aolep ene ko jet ilo ailin in.

Kinke ealikar bwe ejamin naj maron in jokwe armij ion Enjebi, im jejamin naj maron ekkat kijed na ie, jenaj aikuij in mokta kejenolok Enjebi jen plan eo ad mae ien etobrak im dredrelok katak kin jorren jab in. Kin menin enaj aikuij in wor jet oktak ilo Master Plan eo.

Karreo im Keboj Ailin in non an Armij Bar Mour ie

Tibdrik in bebe ko ikijien kareoik im kaarmije ailin in rebed ilo Volume 1 in Master Plan eo an Enewetak. Komelele im jaat in moko imon armij, moko ilo jikin kwelok eo im jerbal ko jet emoj bar likit ejja ilo book in wot.

Master Plan eo ej bareinwot komeleleik wawin naj bar katok ailin in im koboje non an naj dri Enewetak ro make mour ie. Ej bareinwot kwalok

jet wawin ko im armij in Enewetak remaron in naj tobar men eo rej ba economic independence ak einwot ba lale ir make ikijien boktok lojeir im jerramon ko aer. Jekanuij in jela im melele ke ej too wot bwe dri ailin in ren maron in kowainini, im kin wot air naj aikuij in kottar iumin jidrik ien mokta jen air naj maron in katok ene ko ion, juon in lemnak emman bwe jen katok im atakeik Ujelang non ad maron naj bok ad mour jene. Master Plan eo ej kwalok ke ej aikuij in wor jyon wa ebwe an lab non an maron na ialan jerbal jab in non dri Enewetak.

Kajitok Ko Rellab Ikijien Program In

Pepa in emoj dre an kwalok un ko rellab unin kommane program in; emoj bareinwot komeleleik kadkad in im jonan oktak ko ak baijin ko ilo ailin in, konan ko an armij in ailin in ikijien wawin kerjerbal ailin in, im jet ian bebe ko non kareoiki im keboj non an armij bar roltok im mour ie. Koba tok ibben men kein, ebar wor jet kajitok ko reaurok jej aikuij in lemnake kio kin wot an maron in wor oktak ikotaan uak ko an dri Enewetak im lomnak im bebe ko an ro rar keboj program in. Kajitok ko reaurok tata kein:

1. Komelin kejerbal jet wot ian ene ko ilo ailin in.
2. Jonan naj karreo eo enaj komman ilo ailin in, im wawin naj jolok kubijin bomb ko im menoknok ko jet.
3. Jerbal ko an naj ra ko an kein ilo ailin in ko im renaj aikuij in komman elkin roltok eo an armij in Enewetak.

Melim in Kejerbal wot jet ian ene ko ilo Ailin in

Ilo ad kar kemeleleiki kejalin ailin in im jorren ko ie, emoj kar kalikar ke jet ian ene kein elab lok aer baijin jen ko jet, im ke elane ewor enaj jokwe ilo ene kein rebaijin im mona jen keinikkan ko ie, emaron in naj wor kauatata non mour eo aer. Jonak ko emoj an AEC karoki non kejbarok ejmour eo an armij in ailin in rejamin naj jejjet elane ewor en ejokwe ilo ene ko ion. Emoj dre katak kake jet ian wawin ko jemaron in Kommani non bar kareoik ene kein bwe jen maron jokwe ie ak bok ad mour jeni. Jet ian wawin kein rej: Jolok aolepen bwirej eo ebaijin im bar kanne tok ene kein kin bwirej jen ene ko ak ailin ko ejjab baijin bwirej ko ie; eore ion ene kein kin bok ak dreka non bobrae baijin eo jen an kokkure armij; karok jet jikin ko non ekkat mona. Ejelok ian wawin kein en emoj dre kajion lok mokta kaki im jejjab lukun jela elane wawin kein remaron in jerbal iumin juon ien eo eaitok. Bar juon, jerbal rot in, jolok aolep bwirej, ekadrik baj kakijonjon im emaron in lablok an kokkure ene ko jen an komanmanilok. Kinke bwirej jidrik eo itulon im elab unen ej aikuij in naj jako, jejjab jela naj ewi toan im ene kein renaj bar maron in

kemour ak eddrok kair. Bar juon, AEC elab an bere elane wawin kein, ne jebaj wojaki, remaron ke ketebrak emman eo jej jibadreke.

Melelein men in, dri Enjebi rejamin naj maron in kejerbal Enjebi non aer jokwe ak non aer ekkat kijier ie. Renaj aikuij in ja kwonlok jar ko jet im kejerbal ene ko rok-rilik manlok mae ien eo emoj lo bwe ejako an Enjebi kauatata non mour.

Kin wot an drik ad melele kin wawin jolok mel in plutonium, eo im elab an kilidreb im kauatata, AEC emoj an kwalok an konan bwe ejelok en en ilok non Runit mae ien eo edredrelok aer katak im jela kol eo emantata non jolok baijin in ekauatata. Melelein bwe ejelok en emaron in naj lolok Runit ak jokwe ie ak kakijen ie ak ne ewor en eilok nan e, ej aikuij in loor jet rule ko rebbin, mae ien emoj kwalok ke ejako an baijin. Ej aikuij in wor juon wawin bwe armij ren loor kien in im bwe en ejelok en ilok non Runit im baijin na ie. Men in enaj juon men ekauatata non armij eo ej ilok non ene in, im emaron in bar komman jorren non ro jet kin wot an naj bok mottan baijin in non ijoko rejjab baijin.

Naj inebata eo elab tata in kin an armij jamin maron kejerbal Enjebi. Ijowotke, jemaron likit men in bwe ej juon wawin eo ejamin jelet ailin in non in dreo bwe ej naj makwin lok wot baijin eo ilo ene in tokelik; botab, emaron in naj kanuij too an baijin in make jako.

Jonan Karreo in Jolok Baijin

Ej aikuj in alikar wot jen jinoin bwe ejolok wawin en emaron in komman bwe ailin in en rol non kar bar wawin im kejallin eo an mokta jen aer kar test ie. Jet ian oktak ko emoj aer walok ilo ailin in renaj eindrein wot im ilo bar juon wawin, elane jenaj kajion in kareioik lok wot, jemaron in naj komman jet wawin ko remaron in naj ukotlok wot ailin in jen kar wawin eo mokta. Elane jenaj wanjonok kin men in, ej einwot elane jenaj kirijlok aolepen bwirej in juon ene non ad jolok mottan men ko rebaijin in bomb ie. Kin men in, ne baj non jet ian ene ko elab aer baijin, einwot Enjebi, kajitok eo in kio jej et kirij im jolok ak ebaj tulon in en in ke, kotlok bwe baijin kein ren make morlok im enlok im jako iumin juon ien eo eaitok. Ijoke, ejolok men in bobrae ad jokbeje aolepen kubjin kar bomb ko im bareinwot jabrewot menoknok ko rekautata jen melan ene ko.

Jerbal in karreo im jolok kubijin bomb ko im menoknok ko jet rebaijin ejadrin naj aban kin wot ad aikuij in lemake konan ko an armij in Enewetak im loor kien ko an lal in ikijien men rot kein. Juon wawin julok kobej kein ej enin lutokilok ilometo. Non komman wawin jab in, ej aikuij in wor juon melim im jenaj aikuij in loor jet kien ko rekanuij in

ebbin ko im rej jelet jokbej ilometo. Bar juon wawin ej enin bwe jen komman nien kubijin bomb kein ak likit ilo nine ko retiljek, im komakiti non United States ak ijoko jet im julok nai ie. Wawin jab in enaj bar wor aban ie ikijien kadrelon lok kubjin bomb ko ilo America, ikijien ektak im litolikak kobej kein ikottan state ko, im kijien jojen baijin in wa eo enaj boklok men kein non America. Jabrewot ian wawin kein ruo enaj men in komman abelonlon. Jonan an naj too kemadmed jab in, emaron in naj kabijer ad jino kareioik ailin in iumin elon yio. Karumijmij rot in emaron in naj bar jelet roltok eo an armij in ailin in im tore liklok.

Wawin eo kein kajilu ej enin bwe jen jolok aoleben kobej kein, im bareinwot bwirej eo ebaijin nai iloan ron in bomb ko ruo, ak iloan juon ian ron kein, ituion in Runit. Jelak baj lale wawin in einwot enaj tu bidrodro lok komadmedre botab ej naj wor wot aban bwe ektuwe im aljeke kobej kein im menokonok kein non juon wa ak juon kein ebbok (conveyor system) bwe en maron elle ion bedbed lok non ijo ron ko rej bed ie. Men eo menin kabijer wawin in dre in ej konan eo an armij in Enewetak bwe ailin in aer en ejelok mottan baijin ak kubijin kar bomb ko ie jonan wot an maron. Iumin bebe jab in, jenaj aikuij eje tererein ron kein i Runit, bame dren eo jen lowaer, im jimene aolepen loan im terrerein ron kein. Elkin wojak men in, aolepen kubijin bomb ko im bareinwot bwirej eo ebaijin kin plutonium renaj iiok ibben cement im kanne ron kein kin iiok in. Elab an bwe jikin non et aolepen men kein. Kio jenaj kommane juon boren ron kein kin cement im kili mejeir. Ilo wawin in, enanin aolepen plutonium eo ilo bwirej in ene kein enaj jako im jejamin naj inebata kin an armij maron in jorren jen aer menono im an drelon baijin in plutonium ilo enbwinnier. Menoknok kein rebaijin, renaj bed ilo juon jikin eo armij rejela bwe ren jab kebake, im cement eo emaron in naj borok ir jen baijin in bomb. Jenaj aikuij in etale wot jen ien non ien im lale bwe kajur in baijin eo en jab tobar jonak eo ekautata non armij. Wawin in kein kajilu, (jen ba seal i kobej ko iloan ron ko Runit) ej wawin eo jelak lale ekkar tata in im naj tu mokajin an armij in Enewetak rol non ailin in aer. Bar juon aban ej ikijien kareoik mottan mel ko ejelok baijin in bomb ie botab rokaton melan ene ko, im bareinwot miadri ko, moko remorlok, bedbed cement ko ak jabrewot kein jerbal ko rej jutak wot ak ejelok tokjeir. Ewor jilu lajrak ko jemaron in likit men kein ie: ko im rekautata non armij; ko rekaban bwirej ko jen an armij kejerbali; im ko me rekemenoknok mej. Kin wot an naj jabwe kein komadmedre men kein im kin wot an kanoj baj lon jokbej im menoknok en ej aikuij jako, lemnak eo in kio bwe jen komakit wot mokta men ko im rekautata non armij, im ko me rekaban jerbale bwirej ko. Jabrewot men eo (einwot alal, cement, ak mel) im emaron in naj jerbal non kajutak im kokaal jikin jokwe ko an dri jerbal ro, jemaron in naj kejerbali non men in. Jabrewot bar jokbej ko jet armij rej maron wot kejerbali, remaron in aini im kakoni tokelik, im jabrewot

bwe in men kein jemaron in tili ak tami ilojet. Ej naj wor wot jet ian men kein renaj aikuij in bed wot ijo rej jutak ie kio.

Jerbal ko an Kien non Tokelik

Emoj kwalok lemnak in ke jen katok jet bob, ma, ni, im makmok ilo kajojo ian ene ko emoj an Planning Council eo kalet non aer ene in kakijen. Ien eo wot ewor leen ine kein, renaj etali im lale jonan baijin eo ilo mona kein. Test kein renaj komman manlok wot mae ien eo emoj lo bwe mona kein rej walok jen kan kein rejamin kokkure armij ro rej kani. Ilo wawin in, jemaron in naj jela ien eo emokajtata im ene kein remaron in naj kalle im armij renaj maron in kejerbal kobban ene kein non kijier ak non wia kake.

Bwe jen maron jela elane ebolemen jijen im kejeien armij in Enewetak, jenaj aijuij in kajitok bwe ren kakelkel ibben takto ro renaj itok jen ien non ien. Kenja eo moktata enaj komman mokta jen an armij ro rol non ailin in im eo kein karuo enaj komman juon year elkin aer rol, im enaj bar wor kakelkel elane ealikkar ke rej aikuiji. Jabrewot alikar in jemlok eo renaj lo jen kakelkel kein renaj kejerbal non etale ewor ke jorren non enbwinin armij ro ak melan ijoko rej jokwe ie. Bareinwot bwe jemaron in kejerbale non kwalok elane elab jen jonak an drelon baijin in bomb enbwinin armij ak bareinwot elane ejelok oktak. Jej tomak bwe ejamin wor oktak ijoke jejamin lukun jela men in elane jej jab etale im kakilen armij jen ien non ien. Jenaj bar aikuij in bukot wawin bwe ejelok en en rube kien eo ej kemo an armij ilok non Runit.

Bebe eo non Karreo

Elkin etale aolep aban ko ikijien baijin in bomb, men in kautata ko non enbwin, konan ko an armij, jonan money, kein jerbal, im tu bidrodro im tumokaj in jerbale men kein, im ilo ad kajion in balan e men kein woj kojojo, enin bebe eo jej lemantak non lemnake ikijien ailin in Enewetak:

Karreoik Kubijin Bomb ko im Men ko Rebaijin

1. Aolepen kubijin bomb ko im jabrewot men ko jet im rebaijin jen bomb ko ren ae im jen kalbini im seal i nai iloan juon ian ron in bomb ko ak ron ko ruo jimor i Runit.

2. Plutonium eo ilo Aomon, Lujor, im Boken, im kajurin ella ilon in jonak eo emoj an AEC kemalimi, jen totake im likiti ion Runit. Plutonium eo ilo Runit jenaj bar totake im kibij

Runit en lallok mae ien kajur in baijin ie etbar jonak eo emoj an AEC karoke. Aolepen plutonium in enaj bareinwot kallib ilo ron in kar bomb ko i Runit.

Karreoik Men in Kauatata ko jet

1. Jabrewot men in kauatata non mour, ko im rejjab baijin in bomb, jenaj komakiti jen aolep ene ilo ailin in Enewetak.

2. Jabrewot men in kaban jerbal in ekkal ak ekkat renaj jako jen jikin jokwe ko im jen ene ko emoj beek bwe jenaj ekkat ie.

3. Jabrewot em ak jikin jerbal ko im renaj jutak ak kokkaal non an dri karreo ro kejerbali im ewor an armij in Enewetak aikuiji, renaj bed wot elkin an dredrelok jerbal eo, elane kien eo an America ejjab aijuiji.

Jet Rule ko Jej Aikuij Lori

1. Kien eo komman in U. S. Air Force ilo 1972 im ej kemo an armij ilok non Runit enaj wonmanlok wot kitien mae ien emoj an alikar bwe jabrewot eo ej ilok non ene in ejamin naj wor jorren non enbwinnin.

2. Armij in Enewetak remaron wot in jokwe ilo ene ko irok-rilik jen Jinedrol non Kidrenen. Armij ejamin maron naj jokwe ilo ene ko ituion.

3. Jemaron in naj jeraklok ak lolok aolepen ene ko ilo malo in ijelokin wot Runit. Ejelok emaron in naj ilok non Runit mae juon ien eo enaj alikar tokelik elane emoj kalikar ke ejako an kauatata.

4. Armij in Enewetak renaj maron in enwor kijeir jabrewot jikin iloan malo in.

5. Enaj emmon kobao im ebbok leb ilo aoleb ene ijelokin wot Runit.

6. Jemaron ekkat ni ilo ene ko irilik jen Jinedrol non Kidrenen im jen Mijikdek non Billae. Ejamin naj melim ekkat ilo ene ko ion jen Bokoruo non Enjebi, im bareinwot Runit.

7. Bob im ma remaron in naj ekkat ilo ene ko rilik wot. Jejamin naj maron kejerbal bob ko ilo ene ko ion non mona mae ien emoj etali im kalikar ke emmon kejerbali.

8. Pig ko, bao ko, im jabrewot bar men in mour ko jet kijed jemaron in naj taab wot ilo ene ko rok-rilik.

9. Baruleb in ene ko rok-rilik wot (jen Jinedrol non Kidrenen) rekkar non mona.

Karreo im Korrol Armij

Jenaj aikuij in likit Master Plan eo ear jebar jen Council eo an Enewetak bwe en juon bebe eo enaj wonmanlok wot kitien im jenaj aikuij in ketebrake iumin jet yio ko. Enaj aikuij in wor oktak im karok bwe ene ko rok-rilik ren jerbal non an dri Enewetak im dri Enjebi jimor jokwe ie, ijowotke oktak jab in dri ailin in rej aikuij in lomake im koweppene.

Tokjen ko Rellab

Tobrak ko reaurok tata remaron in walok jen bebe in ej wonmantak kio renaj jiban armij ro ilo wawin in:

- Armij ro remaron in naj rol non bwirej ko aer.

- Kobej im menoknok ko rekauatata ak kabanban, renaj jako im enaj emmon laan kalok moko imon armij ak imon jerbal ko an jukjuk in bed eo, im bareinwot katok ailin in.

- Moko im kein jerbal ko renaj jutak non dri jerbal ro ilo program in karreo eo renaj bed wot non an armij in Enewetak kejerbali.

- Jabrewot mar ko ejelok takjeir renaj jako.

- Jen wot ad jolok jabrewot kobej ko ak menoknok ko (ekoba mel, cement, im men ko jet) ewor baijin in bomb ie, enaj kanuij in driklok baijin in bomb eo ilo melan ailin in im armij renaj kar jorren jen e.

- Jabrewot bwirej eo elab plutonium ie jen jonak eo ekkar naj jako.

Tokjen ko im rejamin kanuij emmon non armij im melan Enewetak erren:

- Kin wot ad jab maron in kareoik bwirej ko ilo ene ko ion bwe ebaj tar jen jonan baijin in bomb eo ej bed wot ie im ejjab maron in driklok non jonak emmon iumin juon ien eo ekadru, melelein bwe armij rejamin maron kejerbal jikin kein ilo ien in.

- Jidrik mottan mel in, plutonium, eo im ekilidreb an baijin im eto an jako, enaj bed wot ilo jet ian ene ko, labtata Runit, non in dreo. Elane jenaj kadkad ikijien mokajin an baijin in bomb make enlok ak kotlok im jako, im elane ejelok wawin en jej wojake non komakaj lok kitien ad bok ad mour jen leen keinikkan ko ilo ene kein rebaijin, enaj tarrin 30 yio mokta jen an naj baijin in makwin lok tabar jonak eo im emoj karok ke ejamin komman jorren non enbwinnin armij. Ijowotke, AEC enaj wonmanlok wot im etale Enjebi im ene ko jet i tu ion im lale ewor ke wawin en remaron lo non kadriklok jonan baijin in non juon jonak eo ejamin kokkure mour iumin wot juon ien eo ekadrulok.

- Enaj jad to an dri Enjebi bed ilo ene ko tu rok-rilik kin wot jonan baijin in bomb eo ilo Enjebi.

- Enaj wor jidrik luj ikijien keinikkan ko armij rekonan katoki im enaj bar wor boktak im jorren iumin jidrik ien non ijoko jikin an bao in mejatoto ko lik im mour.

- Enaj mij mottan ik ko ibelakin ene ko im enaj wor rubrub ie ak jerbal ko jet ikijien ekkal im keboj jikin dri ailin in.

SUMMARY OF ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR THE CLEANUP, REHABILITATION AND RESETTLEMENT OF ENEWETAK ATOLL - MARSHALL ISLANDS

INTRODUCTION

This document is a summary of the Environmental Impact Statement (EIS) for a proposed project to clean up the Atoll of Enewetak and resettle the Enewetak people on the atoll. This summary has been prepared specifically for translation into the language of the Enewetak people. For more detailed discussion and information the EIS must be consulted. The project is intended to be a joint project sponsored by the Defense Nuclear Agency, acting as agent for the Department of Defense and the Department of the Interior. The Defense Nuclear Agency has acted as the lead agency in the preparation of this statement and has fully coordinated this statement with the Office of Territorial Affairs, the Department of the Interior.

BACKGROUND OF THE OPERATION AND VIEWPOINT ADOPTED IN THIS IMPACT STATEMENT

The Enewetak people were relocated from their atoll in 1947 so that the islands could be used for the testing of various nuclear devices. The people were resettled on Ujelang Atoll, which is smaller than Enewetak in land and lagoon areas. High Commissioner Edward E. Johnston and Ambassador Franklin Haydn Williams, the President's personal representative to the Micronesian status negotiations announced jointly in April 1972, that the United States was prepared to release Enewetak Atoll to the Government of the Trust Territory of the Pacific Islands by the end of 1973, with the expectation that cleanup and resettlement could eventually take place.

Since the announcement, surveys have been conducted to determine the current condition of the atoll with respect to both physical and radiological hazards. Extensive discussions have been held with the Enewetak people to determine their desires with respect to land use, to the establishment of living and community facilities, to the use of facilities already present, and with respect to the possible short and long term economic development of the atoll. These surveys and these discussions form, in part, the basis for the planning of the proposed operation described herein.

This EIS differs from the usual environmental impact statement. In the usual case, the project being proposed may involve building

something on land which is in a "natural" or relatively undeveloped condition. As a result, the impact of the project on the environment is critically scrutinized and weighed against the expected benefits. If the benefits sufficiently outweigh the adverse impacts, approval of the project can be expected.

In the case of the proposed Enewetak operation, the situation is reversed. The adverse environmental impacts are already present. The islands are already littered with debris and in some areas are contaminated with radioactivity. The proposed operation is one of eliminating these existing impacts and preparing the atoll for resettlement. It is true that the cleanup actions would, themselves, have impacts on the environment. Consequently, this report adopts the view that one must consider not only the impact of the proposed actions and the comparative weight of these actions balanced against existing radiological conditions, but also the impact of any lack of action.

PHASES OF THE PROJECT

A major objective of the proposed operation is to make the atoll suitable for returning the people to the islands as early as possible. Accordingly, for economic, political, and social reasons, it may be desirable to conduct cleanup and rehabilitation concurrently. For purposes of discussion, however, it is convenient to distinguish these elements of the operation as separate phases and, moreover, to identify four phases as follows:

Phase 1 - Cleanup

This phase consists of the removal of debris, structures, and soils which pose hazards or obstruction to human habitation. It also includes the delineation of advisory actions necessary to avoid radiation exposures. (Department of Defense Responsibility)

Phase 2 - Rehabilitation

This phase consists of economic and social rehabilitation measures, such as provision of housing and replanting of coconut trees and other crops, to permit resettlement of the Enewetak people. (Department of Interior Responsibility)

Phase 3 - Resettlement

The resettlement phase would take place after cleanup has been completed and the islands have been certified to be safe. Housing could

then be constructed and the Enewetak people could then occupy the newly built homes and cultivate the land. For the safety of the people, this phase would require mutually imposed controls to assure that the living patterns of the people conform to the limitations recommended by the AEC Task Group Report. While the members of the Planning Council and some of the people might occupy temporary quarters on Japtan, assuming this is determined safe and feasible, to participate in the cleanup and subsequent operations, this latter is not considered part of the resettlement. (Department of Interior Responsibility)

Phase 4 - Long Term Development

Although not considered part of the current project, a fourth and continuing phase may be identified. This phase would follow the cleanup, rehabilitation, and resettlement and would consist of the long range development of the economy, and the culture of the islands. Self imposed controls to assure that the people adhere to the AEC recommendations are included in this phase. (Department of Interior) Long term radiological monitoring and studies of the people and their environment would be accomplished on a periodic basis as needed. (ERDA [AEC] Responsibility)

ASSIGNMENT OF RESPONSIBILITIES

Three government agencies have been involved in the testing and post testing periods on Enewetak and are now involved in planning for the proposed cleanup, rehabilitation and resettlement of the atoll.

The United States acquired Enewetak from the Trust Territory of the Pacific as a nuclear proving ground in 1946. The Department of Defense has been designated to carry out the proposed cleanup to make the atoll safe for human habitation.

The U. S. Atomic Energy Commission (AEC) was responsible for the technical aspects of the Nuclear Testing Program. In keeping with this, the ERDA (AEC) now has the responsibility of providing technical data and acting in an advisory capacity on all radiological matters during both the planning and operational phases of the proposed cleanup program. The ERDA would also assume responsibility for long term radiological monitoring and studies.

The Department of the Interior (DOI) has nominal administrative jurisdiction over the Marshall Islands through the government of the Trust Territory of the Pacific Islands (TTPI), and has the administrative responsibility for the care of the Enewetak people. The DOI has responsibility for the proposed resettlement of the atoll, and the enforcement of advisory controls.

The DOD, ERDA, DOI, and TTPI have solicited the views of the Enewetak people on all substantive matters relating to planning for their return to Enewetak Atoll.

PHYSICAL AND RADIOLOGICAL CONDITION OF THE ATOLL

The condition and appearance of the atoll varies from island to island. Some islands, like Enewetak and Medren, have a large number of structures, such as warehouses, workshops and residences on them. Enewetak has a landing strip, tower and parking areas for airplanes. Others have abandoned structures in various states of disrepair, scrap, debris and the remains of roads while others have little or nothing on them. Plant growth is heavy on most islands. Several of the northern islands have had their outlines changed as a result of nuclear testing, and several have disappeared. The map on the next page shows Enewetak Atoll as it is today. The locations of the tests and the names by which they were identified are located by the arrows and "boxes". This map shows the large number of tests made on or near Enjebi and the islands of the northwest, as well as on Aomon and Runit.

Physical Conditions

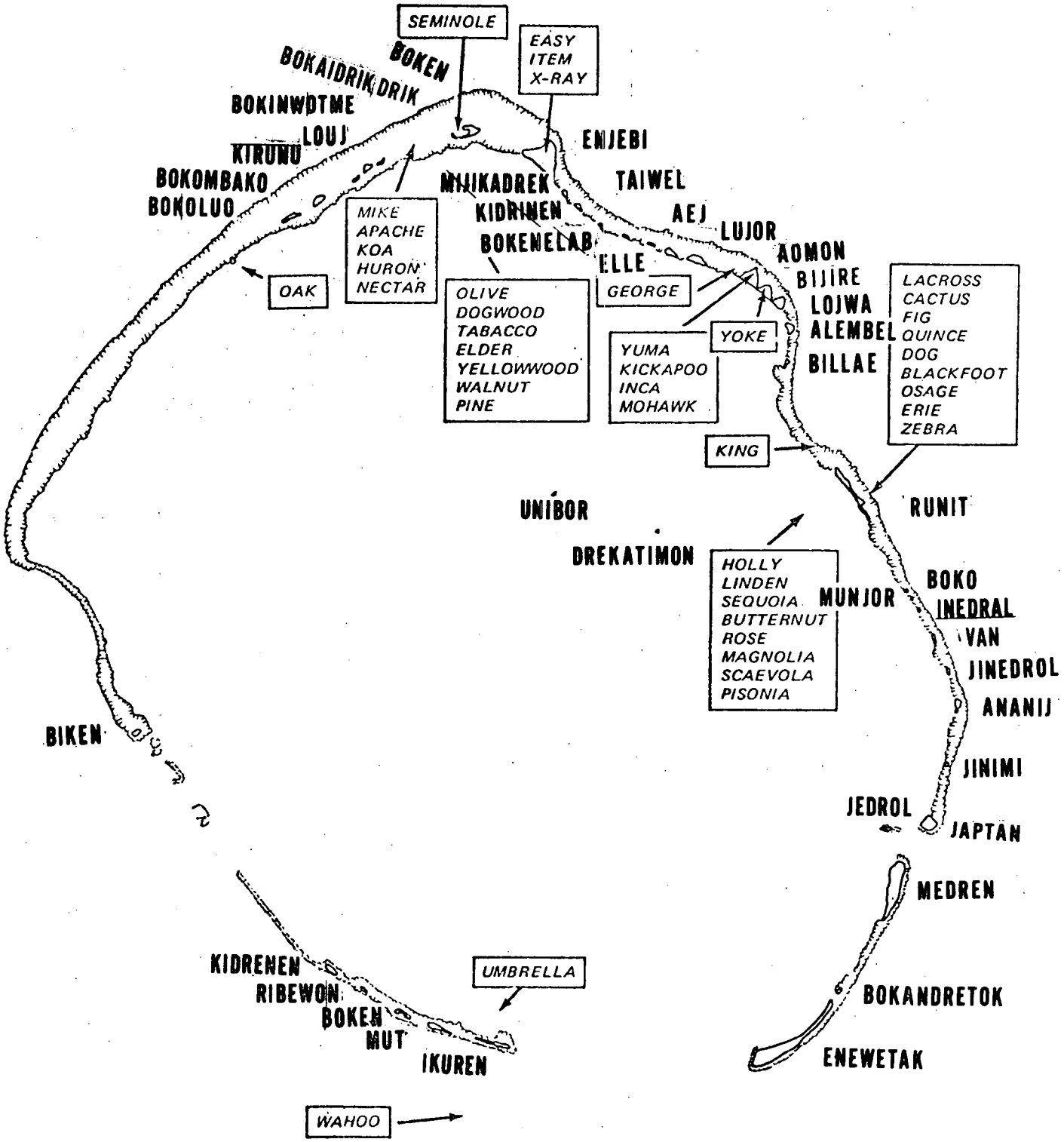
The following sections describe the condition of the environment of the atoll.

Plant Life - Most of the islands are covered by a dense growth made up of trees, brush and vines. On only a few islands, the growth is less dense and a large part of Aomon does not have any trees or shrubs at all. Coconut palms grow on at least fifteen islands and pandanus on a few.

Animal Life - The Enewetak people are known to be interested in the fish and other marine life of the ocean and lagoon, coconut crabs and the sea birds which nest on the atoll. Both fish and birds are in plentiful supply, crabs have been found throughout much of the atoll and no species has been reported as having disappeared because of the testing program. In other words, the Islanders should find animal life very much the same as it was in 1947.

Underground Water

Enewetak must depend upon rainfall for its supply of fresh water. Because the soil is very porous, the rain water drains downward through the ground into the coral which is the foundation of the islands. There it



ENEWETAK ATOLL - TEST LOCATIONS

forms pools of water which mixes with the surrounding ocean water and becomes brackish. On some islands, after sampling has shown the water to be satisfactory, it can be used in an emergency. The water collected in roof catchments and stored in concrete cisterns should normally be used for cooking and drinking.

Buildings, Roads, and Other Construction

The amount of permanent construction that is now on the atoll varies from island to island ranging from a great deal to almost none. The condition of this construction also varies from good to worthless. Some of the buildings, concrete pads, etc., are contaminated by radioactivity. Those which present any hazard would be removed. Buildings, tanks, towers, docks and other items in poor repair would be torn down and the material salvaged to rehabilitate the base camp for the cleanup operation, to be used in the future by the Enewetak people, or to be discarded. The roads on Enewetak Island are in good condition but on most other islands they are overgrown and are not usable.

Debris

Much of the debris on the atoll is free from radioactivity. The material classified as uncontaminated includes the following:

- Concrete buildings in dilapidated condition, concrete slabs, bunkers, rip rap and platforms.
- Steel chain, cable, pipe, landing mats, photo towers, bulkheads, buoys, radar reflectors, tanks and containers.
- Derelict wooden buildings, landing craft, a marine crane, barge and a wooden tower.

Most of this material is scattered over many islands with some islands containing no debris and others with varying amounts up to very large quantities. For example, Jinimi has no debris on it while Medren contains almost half of all the uncontaminated debris and concrete rubble of the atoll.

Radioactive Conditions

The previous sections described the physical condition of the atoll, the islands, plants, animals, water and man-made additions. The purpose of this section is to describe the effects which may be produced on these same parts of the atoll by the radioactivity left over from the tests

conducted. Another factor to be discussed is the effect the radioactivity could have on the people who are to live on the atoll.

Types of Radioactive Materials - The radioactive materials on Enewetak Atoll are the result of the nuclear weapons tests which were made there from 1948 through 1958. These materials are of three general types:

- Radioactive materials which were not consumed or "burned" in the nuclear explosion. This is like the unburned fuel of a fire. Plutonium is the most common material of this type that remains on the islands.

- Radioactive products resulting from the breaking apart during the "fission" process of the explosive materials. These are somewhat like the ashes remaining from a fire that have not yet cooled.

- Radioactive products resulting from being exposed to other radioactive materials. This includes metal and parts from various test structures, and some chemical elements in the soils.

The way these products affect various segments of the atoll, including living things is discussed below.

Enewetak Radiological Survey of the Atoll - In late 1972 and early 1973, the AEC made a radiological survey of Enewetak to study the radioactive condition of the atoll. Radioactivity was found in the soil of the islands, in the sediment at the bottom of the lagoon, in shrubs and trees, and in the flesh of birds and fish. The activity of the northern islands (Bokoluo - Runit) was and remains, much greater than that of the south (Boko - Kidrenen). The reason for this can be concluded from the map where it can be seen that many more weapon tests were performed in the north (particularly the northeast) than in the south.

Soil - The survey showed that the amount of radioactivity varies greatly from place to place on an island as well as from island to island. The survey of the soil condition was made in two ways. One method was by instruments carried in helicopters flown over the islands or carried by men while walking over the islands. The other method was to take small quantities (samples) of soil from various parts of the islands. These samples were examined in laboratories to find the kinds and amounts of radioactive materials present. From these tests, it was found that the islands with the greatest amount of soil contamination are Runit, Enjebi, Aomon and Eleleron. Runit was determined to be the worst contaminated of all.

One of the things that affects the radioactivity in a given section of an island is the amount of vegetation present in the areas where the sample was taken. Areas with many plants and trees show the highest levels while areas with few plants and trees show less. The lowest radiation is found on the beaches. This is caused by the actions of wind, rain and waves which remove the contaminated particles from the sand.

Lagoon and Ocean Water - Radioactivity in the water of the lagoon results from radioactivity washed from the islands or from that which exists on the bottom of the lagoon. Ocean water radioactivity, which is very small, also results from runoff of rainwater or from waves washing the island beaches. The AEC has determined that the radioactivity levels in the lagoon water are not high enough to be harmful. The levels in the ocean water are also low. Measurements are to be made of the radioactivity levels which may exist in the ground water.

Plants and Animals - Plants on all of the islands from Bokoluo on the west to Runit on the east have the highest concentrations of radioactivity on the atoll. The highest levels were found in plants on Boken, Enjebi, and Runit with high levels also present in vegetation from the following islands:

Bokoluo	Elle
Kirunu	Lujor
Bokenelab	Eleleron
Lojwa	Bijire

The islands from Ikuren through Kidrenen were also found to have higher amounts in their vegetation than are usually found in similar plants on other atolls.

Radioactivity is found in all parts of plants such as coconuts and pandanus. The edible parts are of particular concern since this is one means of radiation exposure. It was also found in trees and shrubs which do not have any edible parts.

The radioactivity in birds appears to be related to the radition level of the part of the atoll on which the birds nest. That is, the parts of the birds' bodies which were sampled, such as the muscles and the livers, showed higher concentration in birds nesting on the northern islands than the same kinds of birds nesting in the southern islands. Coconut crabs appear to show the same general pattern although there

were fewer crabs available for testing than there were birds. Coconut crabs also tend to concentrate higher levels of radioactivity by consuming their shells when they molt. Analyses of many fish samples did not show high enough radioactivity of their body parts to be harmful if eaten by people.

Contaminated Debris - Contaminated debris and scrap is found on a number of islands. It is in the form of structures, and scrap metal of all sizes, in piles or as individual pieces scattered over the island. Some structures on Aomon contain plutonium-contaminated debris. The islands having the most contaminated debris are Enjebi, Aomon, and Runit.

RADIOACTIVITY AND PEOPLE

The presence of radioactivity in soil, water, plants and animals is important because of the effects this radioactivity has on people living on the islands. The effects of radiation can cause sickness or even death. Except for some "hot spots", only relatively low levels of radiation are present on the atoll. The possibility (risk) of such effects are much worse for babies, young children, and pregnant women than for other people. However, any possibility (risk) of serious effects are greatly reduced if exposure to the radiation is reduced.

Exposure to radiation occurs in two ways: direct occupancy of contaminated areas and eating of contaminated foods. Occupancy of contaminated areas results in radiation exposure from contaminated soil. Also in the areas containing plutonium, dangerous exposure can result from this material being breathed into the lungs. Exposure from food can happen without visiting the contaminated island. All that is required is to eat food which comes from a contaminated island. Although it is not possible to prevent some exposure of the Enewetak people to radioactive materials, it is possible to reduce the level of exposure so that the danger to health is either very slight or nonexistent.

Not everything is known about the effects of radioactivity on health. However, a great deal of experience has been gained in ways of reducing the exposure to persons to the invisible rays produced by these rare materials. These methods will be described later in this report.

As trees, such as coconut, pandanus, or breadfruit grow, they take the materials they need to grow out of the soil. The trees will draw these materials from the soil through their roots and send them up the trunk into the fruit. If the materials drawn up to the fruit in this way are radioactive, then when people eat the meat or drink the milk,

they will take the radioactivity into their bodies. Some of it will go to the bones and some to the muscles and as these amounts grow, the danger of illness grows, although this will depend on how much one eats.

The same kind of path can be traced for pigs, chickens, and crabs living and eating food in contaminated areas. Although a single meal of contaminated coconuts, breadfruit, meat or crabs would not be enough to produce permanent damage to any part of the body, the radioactive material will store up as more meals are eaten, so that more and more of the harmful materials collect until a really dangerous amount is present. This is why food or copra coming from some of these islands may not be usable for a number of years.

Conditions of Individual Islands

Enjebi - The high concentrations of radioactive materials in the soil on Enjebi could result in a high risk to the driEnjebi by receiving a dose both from exposure to the radioactivity in the soil and by eating the food that might be raised in the radioactive soil such as pandanus, breadfruit, arrowroot, pigs, and chickens. The total dose both from being present on the island and from eating food grown on Enjebi would exceed the dose standards which have been established for the protection of people. For this reason, the AEC has recommended that Enjebi not be used at this time by the driEnjebi for living or agricultural purposes. Three nuclear tests were performed on this island and other larger weapons were tested within a few miles of it. This caused the island to become contaminated to a greater extent than most other islands of the atoll. A person spending a considerable amount of time on the island in its present condition would be exposed to more radiation than allowed by the AEC recommendations. A person living on the island continuously, and more importantly eating food grown on the island, could possibly suffer seriously from exposure to the radiation found there.

Thus, if the driEnjebi are to return to Enjebi to live, there are two problems to overcome - exposure to radiation and the eating of contaminated foods. It has already been shown how coconut, pandanus, and breadfruit could be contaminated. The problem of obtaining uncontaminated food could be solved temporarily since food could be brought to Enjebi from other islands or from other atolls. This solution would leave the driEnjebi entirely dependent on food grown elsewhere except that which could be caught in the lagoon or the ocean. If the supply system were to break down or fail, the people living on Enjebi would be faced with a shortage of uncontaminated food.

The more difficult problem is that of removing the radioactive material that exists. Some of this could be done as part of cleanup since most contaminated structures, scrap and other debris would be taken away. However, in order to attempt to make Enjebi safe for living and for growing coconuts, pandanus, and other vegetable foods, it would be necessary, as a first step, to scrape off all the soil from the island. Even this does not seem to be sufficient to accomplish the desired purpose as it would be necessary, as a second step, to remove some of the sand and coral under the surface soil. In order to make absolutely sure that no radioactive material would be taken up by the roots of new plants, sand and coral would have to be removed to a depth deeper than the roots of coconut, pandanus and breadfruit trees, for the reasons mentioned earlier when explaining the process by which the plants take the materials out of the soil. That is, it would be necessary to remove most all of the radioactivity the roots might touch. After that had been removed, clean soil free of strange insects and organisms, would have to be brought in from other islands or the mainland.

Bringing in new soil would be required to totally enclose the entire root systems of all the trees of the island. In addition, all of this soil would have to be sterilized before being landed on the island. It is hard to see how the operations of removing soil and sterilizing and transporting replacement soil could be accomplished in a practical manner. Also, and much more important, there is no guarantee that the operation would be successful since no large scale soil replacement of this kind has ever been attempted. It would be a very dangerous and impractical operation to devastate the land in order to reduce the radioactivity with no assurance that it would successfully produce the desired results, particularly the ability to grow crops safely. On the other hand, the natural disappearance of radioactive materials, by decay and leaching, would someday bring the island to a state where it would be safe for full time living. As you see, a long time would be needed for the island to become safe again. Proposed plans would require removal of debris both radioactive and nonradioactive.

Japtan - Japtan has been proposed to be the temporary home of the Council and some of the Enewetakese (about 50), who might possibly participate in the proposed cleanup program. It is now thought that Japtan and part of Medren may become the home islands of all of the Enjebi community. At the present time, Japtan has a large number of buildings and other structures on it. There is also a large amount of metal debris and concrete rubble on the reef and scattered throughout the island. Most of the debris on the reef comes from a derelict ship which is breaking up on the edge of the ocean reef. There are some remains of the old German coconut plantation but other trees and shrubs have taken over,

especially on the eastern half of the island where the undergrowth is extremely dense.

Much of the debris that would interfere with the construction of homes, gardens and commercial agriculture could be removed. Some of the present structures could be torn down and only those which could serve a useful purpose would be kept.

Medren - Medren is a badly cluttered island with almost half of the uncontaminated metal debris and concrete rubble of the whole atoll located here. The debris and many of the present structures could be removed in order to have some of the driEnjebi and some of the driEnewetak live there.

The land use of Medren would be very much as shown in the Master Plan. The community center for the driEnjebi could be located where the people choose to place it.

Enewetak - Enewetak has been proposed as the principal island on which the driEnewetak live and have their community center. Subsistence gardens and some commercial agriculture would also be located there. Right now, the island has a large number of buildings and other structures on it. Many of these have had some care so that they are in good condition. Others would be rehabilitated for the construction force who would live there during the proposed cleanup. These are planned to be left for use by the people when the proposed cleanup is finished. Many buildings, concrete pads and other structures could be removed in order to make room for houses and for agriculture. The airstrip, which extends for more than half the length of the islands, would be retained. Since the taxiways and the parking areas are important parts of the airfield, they are important assets which should be considered for retention. Trees and shrubs are quite sparse growing mostly on the ocean side and in the northern half of the island. Most of them are proposed to be removed leaving some for a windbreak and then provision for the planting of commercial and subsistence crops could be made.

Runit - Runit was the site of a number of nuclear explosions and was also used as a temporary camp. Two craters remain from the explosions, the reef is littered with metal debris, concrete blocks, and the remains of equipment. A short airstrip, an abandoned bunker, a hazardous tower, the remains of a pier and several rusting hulks of abandoned landing craft remain. The Master Plan proposes that this island be used for coconut agriculture. As a result of the weapons tests the northern half of the island is contaminated with radioactivity and, in particular, much

plutonium, which is a persistent and dangerous material. The United States Air Force quarantined the island in 1972 to make sure that special precautions are taken by all people who visit the island to insure their safety. No one is to visit Runit for any reason unless these precautions are taken. Because of the nature of the material and because so little is known about it, a team of experts would be assembled to make recommendations on what to do about it. But for planning purposes, it would be placed in one or both of the craters along with radioactive scrap and plutonium contaminated soil from some of the other islands, as described later.

REHABILITATION AND RESETTLEMENT

The Planning Council

The Planning Council of Enewetak was formed by the people with the power to make decisions, within stated limits, on matters of short, intermediate, and long range planning. Technical advisors have been employed to assist the Council in providing workable plans for the community. The advisors would continue to work closely with the Council and the people in agriculture, architecture, economics and other fields, as needed, during the development of the proposed project.

The Enewetakese have established two kinds of priorities for their needs. One of these is for quick action to return the people to the atoll, giving them the needed housing and utilities, and providing them with a subsistence program for their food. The other kind is for long range plans which would bring a way of life in which needed products and services from outside the atoll could be obtained in exchange for things which the Islanders can contribute to the outside world.

Land Use

The islands of the Enewetak Atoll have been put into three classes for future land use. One class is of islands proposed to be used for living and growing food for use by the Islanders. A second class is that of commercial agricultural islands, and the third is of islands proposed to be used for hunting, fishing, and recreation. The Enewetakese living at Ujelang stated their choice of islands as follows:

Residence and Subsistence Islands

Enjebi	Medren	Enewetak	Japtan

Commercial Agricultural Islands

Alembel	Lojwa	Aomon	Bijire
Aej	Ananij	Lujor	Runit

Food Gathering and Recreation Islands

All other islands and islets.

Since it is impractical to live on Enjebi or to grow food there in the near future, Enjebi must be eliminated from consideration until the results of long term AEC studies are available. Consequently, some changes may be required to the Master Plan.

Rehabilitation and Resettlement

Details of rehabilitation and resettlement plans are given in Volume I of the Enewetak Atoll Master Plan. Descriptions and drawings of the houses, community centers and public buildings are also given there.

The Master Plan describes the Agricultural Development Plan which could help the Enewetakese to take care of themselves. It also discusses other possible ways of reaching economic independence. It is known that some time would pass before a large copra harvest could be gathered and, because some of the northern islands would not be planted for a period of time, it may be desirable to develop the Ujelang Atoll for coconut plantations and subsistence crops. The Master Plan states that a boat large enough for the voyage may be available to the Enewetakese.

PROGRAM ISSUES

This document has, up to this point, told of the purpose of this proposed program, the present condition of the atoll, the wishes of the people on the use of the islands, and some aspects of the proposed rehabilitation and resettlement. In addition, there are several important issues which should be considered at this time as the Enewetak people and the planners of this program may favor different solutions to them. The more important of these issues appear to be:

1. Limiting the use of the atoll to certain islands.

2. The amount of cleanup proposed to be done on the atoll, and the manner of disposing of debris.

3. The activities of governmental agencies on the atoll extending beyond the proposed return of the Enewetak people.

Limited Use of the Islands

In describing the condition of the atoll, it was pointed out that several of the islands were more radioactive than others and living on the more radioactive islands and eating food grown on them could endanger health. The standards which have been established by the AEC for the safety of the people would be exceeded if people were to live on the northern islands. Several methods of attempting to restore these islands to a condition where they could be used for living and as food sources have been studied. They include: removal of all contaminated soil and replacement with clean soil from clean islands or a clean atoll; placement of a sand and gravel layer to shield people; provision of special growing areas for food crops. None of these methods have been tried previously and there is no assurance that the methods would work satisfactorily for the long term. In addition, these are drastic measures to remove the existing contamination and could do more damage to the islands than would be justified by the benefit. Since the scanty supply of top soil would have to be completely removed, it is not known how long would be required to make the islands productive for even subsistence crops. Further, the AEC seriously questions whether any of these methods, even if attempted, would be successful.

This means that the driEnjebi could not use Enjebi as a residence or agricultural island. They would have to share other islands in the south on an extended basis until Enjebi was determined to be safe.

Because so little is known about disposing of plutonium, which is a long lasting and dangerous material, the AEC has recommended that the island of Runit be quarantined and that studies be made to determine the best method of getting rid of this harmful material. It would mean that Runit could not be used for food gathering or recreation or even visited except under strictly controlled procedures until it is declared safe. A means of enforcing the quarantine of this island would also be necessary to be sure that people do not visit Runit and pick up the contamination. This would endanger the person visiting the island and could endanger other people by carrying small pieces of contaminated material to safe areas.

The most troublesome restriction would be the inability to use a valuable asset, Enjebi. This could be considered to be temporary since eventually the radioactivity on the island would be reduced to safe levels by natural means; however, this period may be lengthy.

Degree of Cleanup and Disposal

It must be recognized immediately that there is no possible way to restore the atoll to the condition it was in before testing began. Some changes are permanent and, in many cases, attempts to clean up the islands to the utmost would produce other permanent and undesirable changes. An example of this would be scraping off the top of an island to remove radioactive materials. So, for some of the badly contaminated islands such as Enjebi, the issue becomes one of either "tearing up" the island or letting natural processes perform this removal over a long period of time. However, there is nothing to prevent the removal of radioactive scrap and other debris along with hazardous nonradioactive structures and other unwanted materials.

The problem of radioactive scrap and debris disposal is complicated by many factors which include the desires of the Enewetak people and international rules. One method of disposal would be to dump all debris in the open ocean. This means would involve obtaining a permit and complying with strict regulations concerning dumping in international waters. A second method involves "canning" the radioactive scrap and transporting it for disposal in the continental United States or elsewhere. This procedure would produce problems concerned with the importation of radioactive waste materials, transporting them between and across various states and the decontamination of the ship bringing the material to the United States. Either of these first two alternatives would be highly controversial. The time required for resolution of this controversy could delay the proposed cleanup for several years. Such a delay could mean that any return of the people to the atoll would have to be postponed. A third method would be that of dumping all scrap, including radioactive soil, into one or both craters on the north end of Runit. While this would appear to be the simplest and most direct procedure, it is complicated by the need to off-load the material coming from other islands onto a smaller vessel or conveyor system in order to carry it across the reef to the craters. An important objection to this alternative is the desire of the Enewetak people to have their entire atoll as free from radiological scrap and debris as possible. This proposal would involve diking the craters on Runit, pumping out the water and lining the craters with concrete. Following this operation, the radioactive scrap and the plutonium contaminated soil would be mixed with concrete and placed in the craters. Sufficient space is available for this amount of material. On top of the material a thick concrete cap or lid would be placed. This would remove most of the plutonium from the soil of the islands and remove the possibility of inhalation of plutonium particles. These harmful materials would be placed in a known location where people would be aware of the

hazard and the concrete would provide a shield from the radiation. Considerable testing would be done to make sure that dangerous concentrations no longer exist. This third alternative (sealing the radioactive debris in the craters on Runit) appears to offer the only means by which an early return of the Enewetak people to the atoll can be assured.

The extent to which nonradioactive scrap, towers, delapidated buildings, concrete pads and other unusable structures would be removed is also a problem. This material can be classified into three separate categories: that which presents a physical hazard to people; that which obstructs the land from its intended purpose; and that which is just plain unsightly. Considering the resources that are available and the large amounts of this material available, it is proposed to remove only the hazardous and obstructive material described in the Engineering Survey. The material that may be usable in rehabilitation of the base camp would be put to use for the purpose. Other usable material would be stockpiled for use by the people and the remainder of the material would be either burned or disposed of in the lagoon. Some material would of course have to be left in place.

Future Governmental Activities

It has been suggested that test planting of pandanus, breadfruit, coconut, and arrowroot should be made on each of the islands selected by the Council for agricultural use. As edible parts of these plants become available, they would be sampled for radioactivity. Sampling would continue until it was found that the plants were producing edible parts which were safe for consumption. In this way it would be possible to find the earliest time at which the islands being tested could produce commercial crops.

In order to determine if the diet and living conditions of the Enewetak people have been satisfactory, the people would be asked to take certain physical examinations by a visiting doctor from time to time. The first test would be made before moving back to the atoll, the next a year after moving back, and then others as they would seem to be needed. Information from these examinations would be a continuous check on the health of the people and their environment. It could be used to show if exposure was approaching the limit which had been set for it or if no change was occurring. It is more likely that no changes would be taking place but this could only be proven by testing. Means for enforcing the quarantine of Runit might also be required.

Proposed Cleanup Actions

After weighing the various problems concerned with the radioactivity, the physical hazards, the peoples' desires and the resources that might be available in order to strike a practical balance between the various factors, it is proposed to perform the following operations on Enewetak Atoll:

Cleanup of Radioactive Materials

1. Radioactive scrap from all islands would be collected and entombed in one or both of the craters on Runit.

2. Plutonium on Aomon, Lujor and Boken in excess of levels established by the AEC would be dug up and placed on Runit. The material on Runit would be dug up until measurements show that the levels are below those established by the AEC. This material would be entombed in one or both craters on Runit.

Cleanup of Physical Hazards

1. Physical hazards would be removed from all islands in the atoll.

2. Obstructions to the development of housing and agriculture areas would be removed from the residential and agricultural islands.

3. The structures and facilities developed or rehabilitated for the cleanup work force which would be useful to the Enewetak people would be left upon completion of the task, if not required by the United States Government.

Advisory Controls

1. The quarantine that was established on Runit by the United States Air Force during 1972 would continue in effect until it could be shown that people visiting the island would recieve the smallest dose possible.

2. The Enewetak people could live only on the southern islands Jinedrol through Kidrenen. They could not live on Enjebi or any of the northern islands. Based on purely radiological decay and if no remedial measures regarding local food

production were taken, more than 30 years would be required before the projected radiological doses would fall to acceptable levels. However, the ERDA would continue to study Enjebi and the northern islands to determine if any reliable methods can be found to reduce expected exposures to acceptable levels within a shorter period of time.

3. Travel and short visits to all of the islands would be permitted with the exception of Runit. Runit would be out of bounds until some indefinite future time as it may be declared safe.

4. Fishing for food anywhere in the lagoon would be permitted.

5. Capturing wild birds and gathering wild bird eggs would be permitted on any island except Runit.

6. Coconuts could be grown on the southern islands Jinedrol through Kidrenen and on Mijikadrek through Billae. Coconut cultivation would not be permitted on the northwest islands of Bokoluo through Enjebi and Runit.

7. Pandanus and breadfruit could be cultivated on the southern islands only. Pandanus from any of the northern islands could not be eaten until they have been tested and declared safe.

8. Pigs, chickens and other animals used for domestic meat must be grown on the southern islands only. (Jinedrol through Kidrenen)

9. Coconut crabs could be taken and eaten only from the southern islands. (Jinedrol through Kidrenen)

Rehabilitation and Resettlement

The Master Plan as developed by the Enewetak Council, must now be considered as a long range plan which would be accomplished over many years. Suitable temporary changes to accommodate the development of the southern islands for both the driEnjebi and the driEnewetak must be considered and agreed.

Principal Impacts

The principal accomplishments of the proposed operation would be advantageous to the people in the following ways:

- The people could return to their land.

- Dangerous debris, litter and structures would be removed to permit the construction of homes and community centers and the development of agriculture.

- Useful buildings and facilities developed for the cleanup work force would be left for the use of the people.

- Undesirable vegetation would be removed.

- Some external radiation exposure would be reduced by removal of contaminated scrap.

- Plutonium bearing soil exceeding established standards would be removed.

The principal adverse impacts resulting from the operation and the advisory controls are:

- Inability to clean up suitably the land on the northern islands because of high levels of residual radioactivity which cannot be reduced to safe levels in a short period of time would mean these islands could not be used by the people at this time.

- A small amount of a persistent radioactive element, plutonium, would remain on several islands, especially Runit, in perpetuity.

- An extended relocation of the driEnjebi to the southern islands because of the radiological conditions on Enjebi.

- Possible overcrowding in future years based on projected population increase.

- Some loss of desirable vegetation and disruption of habitats for birds and animals.

- Some fish kill resulting from blasting and other construction operations.