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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

|                                  |   |                        |
|----------------------------------|---|------------------------|
| In the Matter of                 | ) |                        |
|                                  | ) |                        |
| LONG ISLAND LIGHTING COMPANY     | ) | Docket No. 50-322-OL-3 |
|                                  | ) | (Emergency Planning    |
| (Shoreham Nuclear Power Station, | ) | Proceeding)            |
| Unit 1)                          | ) |                        |

LILCO'S PROPOSED CORRECTIONS TO TRANSCRIPT

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>   |
|---------------------|-----------------|---|
| 875                 | 5               | Replace the question mark with a period so that "during the impact?" becomes "during the impact."   |
| 885                 | 20              | Change "tha LIRO" to "that LERO"  |
| 885                 | 25              | Change "LIRO" to "LERO"   |
| 886                 | 24              | Change "let it call it either a family contingency plan." to "let us call it a family contingency plan."  |
| 887                 | 6-8             | Change "are they going to be involved in emergencies are able to make those types are going to make those type of contingency plans" to "who are going to be involved in emergencies are able to make those types -- are going to make those type of contingency plans" |

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| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>   |
|---------------------|-----------------|---|
| 887                 | 20              | Change "about here" to "about it here"  |
| 887                 | 24-25           | Change "plans for families, that is what people at home might do, while the person at work stays there, to my way of thinking," to "I would add that contingency plans for families -- that is, what people at home might do, while the person at work stays there -- to my way of thinking," |
| 888                 | 6               | Change "I think reduce mental role strain," to "I think it would reduce mental role strain,"  |
| 888                 | 24              | Change "suggested" to "suggests"  |
| 896                 | 19              | Change "if turned out" to "if it turned out"  |
| 898                 | 16              | Insert a comma after "EOC"  |
| 909                 | 2               | Change "Don't" to "No,"   |
| 913                 | 6               | Change "plant" to "plan"  |
| 915                 | 7               | Change "Light" to "Lighting"  |
| 915                 | 8               | Change "plant" to "plan"  |
| 915                 | 23              | Change "EPC" to EPZ"  |
| 917                 | 12              | Change "Repka" to "LILCO"   |
| 920                 | 14              | Change "traditional" to "tradition"   |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>  |
|---------------------|-----------------|--|
| 920                 | 14              | Change "Don't" to "They don't"   |
| 920                 | 18              | Change "Samual Penn" to "Samuel Prince"  |
| 921                 | 6               | Change "studies" to "studied"  |
| 921                 | 12              | Change "If" to "Is"  |
| 921                 | 20              | Change "published" to "publish"  |
| 923                 | 14              | Change "welcomed" to "welcome"   |
| 926                 | 3               | Change "rolls" to "roles"  |
| 928                 | 23              | Change "Drabek" to "Drabek's"  |
| 929                 | 8               | Change "same was" to "same"  |
| 929                 | 18-19           | Replace the comma after "radioactivity" with a period. Change "if" at the beginning of the next line to "If" |
| 932                 | 9               | Change "defused" to "dif-fused"  |
| 932                 | 17              | Change "agent as" to "agent such as"   |
| 938                 | 22              | Change "Role Candidates" to "for candidates"   |
| 945                 | 20              | Change "like here" to "like her"   |
| 949                 | 5               | Change "communicate" to "communicated"   |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>  |
|---------------------|-----------------|--|
| 958                 | 15              | Change "since you would not be evacuated" to "since you would not evacuate,"                       |
| 977                 | 20              | Change "primarily" to "primary"  |
| 981                 | 2               | Change "cite" to "quote"   |
| 987                 | 17              | Change "behalf" to "behaved"   |
| 993                 | 24-25           | Change "As I have perhaps. Bates" to "As I have, that perhaps Bates"                               |
| 1,021               | 19              | Change "you have doing," to "you have been doing,"   |
| 1,037               | 16              | Change "Waited our Notification" to "Waited On Notification"                                       |
| 1,040               | 3               | Change the question mark at the end of the line to a period  |
| 1,040               | 14              | Change "Commander in Control" to "command and control"   |
| 1,047               | 4               | Change "our notification" to "for notification"  |
| 1,059               | 8               | Change "genetic" to "generic"  |
| 1,062               | 22              | Change "tell him to call" to "tell him whom to call"   |
| 1,076               | 6               | Change "ambiguous for whatever reason. A person" to "ambiguous. 'For whatever reason' -- a person" |
| 1,082               | 20              | Change "took and some" to "took some"  |



| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>   |
|---------------------|-----------------|---|
| 1,094               | 19              | Change "eventualized" to "eventually analyzed"              |
| 1,095               | 22              | Change "principles" to "principals"                         |
| 1,097               | 22              | Change the question mark at the end of the line to a period |
| 1,098               | 14              | Change "a sample" to "an example"                           |
| 1,108               | 2               | Change "opening-ended" to "open ended"                      |
| 1,124               | 8               | Change "sites" to "cites"                                   |
| 1,141               | 21              | Change "information. with" to "information, with"           |
| 1,143               | 12              | Change "workers" to "worker"                                |
| 1,148               | 16              | Change "EPA" to "EPZ"                                       |
| 1,149               | 18              | Change "objected" to "directed"                             |
| 1,150               | 9               | Change "difference than" to "differences in"                |
| 1,153               | 4-5             | Change "face to fact" to "face-to-face"                     |
| 1,164               | 11              | Change "prophesize" to "prophesy"                           |
| 1,177               | 21              | Change "Mississogua" to "Mississauga"                       |
| 1,179               | 15              | Change "unavoidable" to "unavoidably"                       |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                                       |
|---------------------|-----------------|---|
| 1,179               | 20              | Change "didn't" to "doesn't"                            |
| 1,180               | 25              | Change "inconveivable" to "inconceivable"               |
| 1,181               | 2               | Change "possible" to "possibly"                         |
| 1,181               | 17              | Change "clouds" to "cloud"                              |
| 1,225               | 15              | Change "Coppleman" to "Koppelman"                       |
| 1,231               | 25              | Change "I'm thinking about" to "I think I'm about at"   |
| 1,239               | 6               | Change "one duty" to "on-duty"                          |
| 1,243               | 6               | Change "direced" to "directed"                          |
| 1,248               | 10-11           | Change "Disasters in Family" to "Disasters: Not Family" |
| 1,255               | 23              | Change "estimated guess" to "estimate or guess"         |
| 1,257               | 14              | Change "Babby's" to "Babbie's"                          |
| 1,258               | 5               | Change "Babby's" to "Babbie's"                          |
| 1,266               | 18              | Change "inate" to "inert"                               |
| 1,284               | 10              | Change "public value" to "probative value"              |
| 1,287(A)            | 3               | Change "Ericson" to "Erikson"                           |
| 1,287(A)            | 10              | Change "Ericson" to "Erikson"                           |
| 1,311               | 18              | Change "slags" to "slag"                                |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>  |
|---------------------|-----------------|--|
| 1,314               | 6-7             | Change "And you remember that a storm came up and cooled" to "And you remarked that a storm might come up and cool"  |
| 1,314               | 19-24           | Change "And the book, you interpreted this to mean at Buffalo Creek, this is his first reaction after the flood. The people of Buffalo Creek didn't mention the casual mention of the storms, particularly as as form of relief" to "And in the book, you interpreted this to mean that at Buffalo Creek -- this is his first reaction after the flood -- the people of Buffalo Creek didn't welcome the casual mention of storms, particularly as a form of relief" |
| 1,315               | 15              | Change " -- old man later on" to "Now you met the same old man later on"   |
| 1,315               | 24              | Change "sensitivity" to "insensitivity"  |
| 1,315               | 25              | Change "is associated" to "associated"   |
| 1,316               | 3               | Change "You made a study of Arnold" to "You made a study of the Buffalo Creek disaster for Arnold"   |
| 1,316               | 6               | Change "everything" to "the material"  |
| 1,316               | 15-16           | Change "the rhythm of the suit itself. That" to "the rhythm of the suit itself that"   |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>   |
|---------------------|-----------------|---|
| 1,317               | 8               | Change "encountered" to "encounter"   |
| 1,317               | 20              | Change "said" to "say"  |
| 1,317               | 21              | Change "people" to "people I interviewed"   |
| 1,320               | 3               | Change the period after "correct" to a question mark  |
| 1,322               | 5               | Change "in a thick file" to "and a thick file"  |
| 1,322               | 14              | Change "in a thick file" to "and a thick file"  |
| 1,322               | 20              | Change "be a factor of" to "be a factor in"   |
| 1,335               | 18-19           | Change "not more than to argument, in turn, may generate research and" to "no more than arouse argument, it will prove valuable, for argument in turn may generate research. And" |
| 1,335               | 23              | Change "Killian" to "Killian's"   |
| 1,335               | 25              | Change "this 1952" to "his 1952"  |
| 1,338               | 6               | Insert a comma after "names"  |
| 1,338               | 13-14           | Change "on the two weeks, Killian's 1952 article, and the 1958 article" to "only the two works, Killian's 1952 article, and Form and Nosow's 1958 article"                        |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>   |
|---------------------|-----------------|---|
| 1,338               | 25              | Change "these roles despite the concern" to "those roles despite concern" |
| 1,339               | 2               | Change "units shut" to "units were safely shut"                           |
| 1,339               | 19              | Change "Sam" to "Halifax"   |
| 1,341               | 5               | Delete "the"  |
| 1,341               | 9               | Change "emergency" to "emergency plans"                                   |
| 1,344               | 21              | Change "encounter" to "encounter a"                                       |
| 1,367               | 5               | Change "Halofast" to "Halifax"  |
| 1,367               | 7               | Change "pretrial" to "pre-filed"  |
| 1,370               | 6               | Change "principals" to "principles"                                       |
| 1,371               | 17              | Change "two workers" to "of workers"                                      |
| 1,377               | 23              | Change "problems" to "province"   |
| 1,378               | 10              | Change "valuable" to "value"  |
| 1,378               | 15              | Change "to him" to "Tom"  |
| 1,379               | 22              | Change "this is more likely" to "are they more likely"                    |
| 1,380               | 2               | Change "denied" to "tried"  |
| 1,387               | 2               | Change "and rule" to "and I will rule"                                    |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>  |
|---------------------|-----------------|--|
| 1,388               | 12              | Change "theories" to "theory"  |
| 1,391               | 15-16           | Change "agreement of Dr. Cole of" to "agreement with Dr. Cole on"                              |
| 1,392               | 12              | Change "There's" to "Does"   |
| 1,392               | 13-14           | Change "included in Rita White's master thesis of" to "include Meda White's masters thesis at" |
| 1,392               | 16              | Change "Rita" to "Meda"  |
| 1,393               | 1               | Change "Rita" to "Meda"  |
| 1,393               | 13              | Change "books" to "book"   |
| 1,395               | 8               | Change "books" to "book"   |
| 1,395               | 9               | Change "relate to" to "Meda"   |
| 1,395               | 19              | Change "(Witness J. Johnson)" to "(Witness Erikson)"   |
| 1,396               | 13              | Insert "(Witness J. Johnson)" before the answer  |
| 1,396               | 25              | Change "grease" to "agree"   |
| 1,411               | 15              | Change "instant" to "instance"   |
| 1,416               | 12              | Change "MITR" to "MITRE"   |
| 1,416               | 13              | Change "M-i-t-r" to "M-i-t-r-e"  |
| 1,416               | 19              | Change "point seen" to "point not seen"  |
| 1,417               | 10              | Change "Golhaber" to "Goldhaber"   |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>   |
|---------------------|-----------------|---|
| 1,420               | 10              | Change "at" to "as"   |
| 1,420               | 14              | Change "become" to "come"   |
| 1,422               | 5               | Change "salients" to "salience"   |
| 1,422               | 7               | Change "salients" to "salience"   |
| 1,422               | 19              | Change "salient" to "salience"  |
| 1,422               | 22              | Change "salients" to "salience"   |
| 1,423               | 23              | Change "of better views" to "of interviews"   |
| 1,432               | 19              | Change "techniques you" to "techniques she"   |
| 1,456               | 6               | Change "McIntyre" to "McIntire"   |
| 1,456               | 8               | Change "McIntyre" to "McIntire"   |
| 1,456               | 24              | Change "McIntyre" to "McIntire"   |
| 1,457               | 5               | Change "McIntyre" to "McIntire"   |
| 1,472               | 14              | Change "I think we just assume dispense the summary" to "I think we'd just as soon dispense with the summary" |
| 1,472               | 15              | Change "I think we just assume dispense the summary" to "I think we'd just as soon dispense with the summary" |



| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>  |
|---------------------|-----------------|--|
| 1,480               | 15              | Change "I have called" to "I have what is called"  |
| 1,488               | 21              | Change "question" to "objection"   |
| 1,528               | 5               | Change "little company's" to "LILCO"   |
| 1,546               | 4               | Change "Prince and" to "Fritz and"   |
| 1,740               | 16              | Change "Slovvic" to "Slovic"   |
| 1,744               | 19              | Change "Slovak" to "Slovic"  |
| ff. 1,808           |                 | A revision of Attachment 14 to LILCO's prefiled testimony on shadow phenomenon should have been bound in the record following Tr. 1808. Pages of the revised attachment were mistakenly bound in after Suffolk County Exhibit EP-2, following Tr. 1750. A complete copy of revised Attachment 14 is attached to these proposed transcript corrections. |
| 1,838               | 10              | Change "Don Sorenson" to "John Sorensen"   |
| 2,038               | 23              | Change "not" to "no"   |
| 2,072               | 15              | Change "con injury up you some" to "conjure up some"   |
| 2,136               | 15              | Change "to answer" to "to your answer"   |
| 2,300               | 18              | Change "Dr. Milette" to "Dr. Milette"  |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                          |
|---------------------|-----------------|--|
| 2,351               | 16              | Change "pick" to "picking"                 |
| 2,362               | 4               | Change "Cordero" to "Cordaro"              |
| 2,362               | 10              | Change "Cordero" to "Cordaro"              |
| 2,363               | 10              | Change "Cordero" to Cordaro"               |
| 2,363               | 14              | Change "Cordero" to "Cordaro"              |
| 2,363               | 22              | Change "Cordero" to "Cordaro"              |
| 2,364               | 8               | Change "mean" to "meet"                    |
| 2,380               | 21              | Change "deliberate" to "de-<br>liberately" |
| 2,381               | 12              | Change "wish" to "with"                    |
| 2,386               | 18              | Change "Cordero" to "Cordaro"              |
| 2,387               | 11              | Change "Cordero" to "Cordaro"              |
| 2,387               | 13              | Strike "f"                                 |
| 2,387               | 16              | Change "Cordero" to "Cordaro"              |
| 2,388               | 4               | Change "Cordero" to "Cordaro"              |
| 2,388               | 8               | Change "Cordero" to "Cordaro"              |
| 2,388               | 12              | Change "Cordero" to "Cordaro"              |
| 2,389               | 7               | Change "Cordero" to "Cordaro"              |
| 2,389               | 19              | Change "Cordero" to "Cordaro"              |
| 2,389               | 22              | Change "Cordero" to "Cordaro"              |
| 2,401               | 7               | Change "same it" to "same as<br>it"        |
| 2,401               | 21              | Change "EPA" to "EPZ"                      |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                              |
|---------------------|-----------------|--|
| 2,402               | 17              | Change "don't the" to "don't think the"        |
| 2,406               | 15              | Change "undifferntiated" to "undifferentiated" |
| 2,416               | 13              | Change "origina" to "original"                 |
| 2,423               | 24              | Change "puzzles" to "puzzled"                  |
| 2,430               | 3               | Change "or not" to "not of"                    |
| 2,452               | 13              | Change "shold" to "should"                     |
| 2,456               | 19              | Change "There" to "They"                       |
| 2,456               | 22              | Change "greet" to "green"                      |
| 2,478               | 9               | Change "incurs" to "occurs"                    |
| 2,524               | 24              | Change "Iked" to "liked"                       |
| 2,542               | 22              | Change "nod" to "node"                         |
| 2,562               | 16              | Change "Contentio's" to "contentions"          |
| 2,590               | 17              | Change "does" to "dose"                        |
| 2,610               | 2               | Change "competence" to "confidence"            |
| 2,612               | 12              | Change "scraping" to "starting"                |
| 2,614               | 8               | Change "signs" to "states"                     |
| 2,618               | 19              | Change "regs" to "routes"                      |
| 2,625               | 11              | Change "safe" to "same"                        |
| 2,630               | 8               | Change "EDS" to "EBS"                          |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                                   |
|---------------------|-----------------|---|
| 2,634               | 10              | Change "vehicles" to "vehicle"                      |
| 2,663               | 15              | Change "minimu" to "minimum"                        |
| 2,691               | 20              | Change "disparied" to "disparate"                   |
| 2,694               | 17              | Change "difference" to "indifference"               |
| 2,694               | 22              | Change "Short Creek Road" to "a short link to Rose" |
| 2,694               | 25              | Change "of so" to "feet or so"                      |
| 2,695               | 19              | Change "road" to "Bay Road"                         |
| 2,702               | 9               | Change "substitute" to "substantive"                |
| 2,748               | 2               | Change "the Carlo" to "the Monte Carlo"             |
| 2,756               | 22              | Change "enter" to "exit"                            |
| 2,758               | 13              | Change "Main" to "Maine"                            |
| 2,758               | 14              | Change "Main" to "Maine"                            |
| 2,974               | 22              | Change "EPC" to "EPZ"                               |
| 2,986               | 22              | Change "htink" to "think"                           |
| 3,092               | 25              | Change "say" to "stay"                              |
| 3,101               | 11              | Change "of" to "is"                                 |
| 3,112               | 14              | Change "now" to "not"                               |
| 3,173               | 18              | Change "Sanai" to "Sinai"                           |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                                 |
|---------------------|-----------------|---|
| 3,322               | 8               | Change "guides are afforded" to "guides afforded" |
| 3,349               | 7               | Change "Dr" to "Judge"                            |
| 3,430               | 8               | Change "1981" to "1982"                           |
| 3,743               | 10              | Change "cite" to "site"                           |
| 3,750               | 24              | Change "behaviorlist" to "behavioralist"          |
| 3,779               | 12              | Change "Zuegin" to "Zeugin"                       |
| 3,781               | 1               | Change "capaciry" to "capacity"                   |
| 3,802               | 15              | Change "amouht" to "amount"                       |
| 3,859               | 6               | Change "director" to "direction"                  |
| 3,861               | 4               | Change "Netson" to "Netsim"                       |
| 4,226               | 9               | Change "Brooke" to "Brookhaven"                   |
| 4,347               | 13              | Change "perceive" to "proceed"                    |
| 4,398               | 10              | Change "system-like" to "system-wide"             |
| 4,472               | 17              | Change "review" to "renew"                        |
| 4,825               | 5               | Change "Hademneck" to "Haddam Neck"               |
| 4,828               | 12              | Change "Hedemneck" to "Haddam Neck"               |
| 4,843               | 5               | Change "floored" to "explored"                    |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                          |
|---------------------|-----------------|--|
| 4,848               | 23              | Change "progressed" to "processed"         |
| 4,857               | 3               | After "potentially" add the word "as"      |
| 4,866               | 21              | Change "LILCO" to "Local"                  |
| 4,867               | 1               | Change "Lilco" to "local"                  |
| 4,867               | 3               | Change "of the 26th" to "on Contention 26" |
| 4,868               | 9               | Change "Q" to "A"                          |
| 4,922               | 13, 24          | Change "Lanpher" to "Farnham"              |
| 4,937               | 16              | Change "is" to "has"                       |
| 4,938               | 6               | Change "the" to "that"                     |
| 4,939               | 9               | Change "of" to "and"                       |
| 4,954               | 18              | Change "in coder" to "encoder"             |
| 4,958               | 16              | Change "blaced" to "blackened"             |
| 4,960               | 7               | Change "individuals" to "individual"       |
| 4,960               | 7               | After "individual" add the word "sirens"   |
| 4,963               | 5,8             | Change "Patchough" to "Patchogue"          |
| 4,975               | 7               | Change "Wilde" to "Wyle"                   |
| 4,991               | 16              | Change "referened" to "referenced"         |
| 5,000               | 17              | Change "tima" to "time"                    |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                        |
|---------------------|-----------------|--|
| 5,004               | 9               | Change "man" to "map"                    |
| 5,012               | 7               | Change "difficult" to "diffi-<br>culty"  |
| 5,042               | 9               | Change "peopel" to "people"              |
| 5,057               | 21              | Change "FEME" to "FEMA"                  |
| 5,060               | 6               | Change "leading" to "leaving"            |
| 5,063               | 9               | Change "typo" to "topo"                  |
| 5,069               | 25              | Change "Farley" to "Varley"              |
| 5,070               | 2               | Change "Farley" to "Varley"              |
| 5,095               | 7               | Change "thrt" to "that"                  |
| 5,099               | 14              | Change "Lawa" to "Laws"                  |
| 5,119               | 10              | Change "FDS" to "FTS"                    |
| 5,166               | 24              | Change "1080" to "1980"                  |
| 5,169               | 5               | Change "1065" to "1969"                  |
| 5,196               | 24              | Change "restrate" to<br>"restate"        |
| 5,200               | 19              | Change "ZI" to "I"                       |
| 5,204               | 21              | Change "commencing" to "com-<br>menting" |
| 5,238               | 24              | Change "Farley" to "Varley"              |
| 5,239               | 1               | Change "Farley" to "Varley"              |
| 5,239               | 3               | Change "Farley" to "Varley"              |
| 5,239               | 3               | Change "Farley" to "Varley"              |



| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>   |
|---------------------|-----------------|---|
| 5,253               | 1               | Change "Sand" to "Sag"  |
| 5,253               | 6               | Change "Sand" to "Sag"  |
| 5,253               | 8               | Change "Sand" to "Sag"  |
| 5,260               | 18              | Change "WALM" to "WALK"   |
| 5,268               | 22              | Change "Milette" to "Mileti"  |
| ff. 5,337           |                 | A copy of LILCO's prefiled written testimony on Contention 58 (Notification to Special Facilities and Hearing Impaired Persons at Home), which should have been bound into the transcript following Tr. 5,337, was inadvertently omitted. |
| 5,342               | 15              | Change "thresed" to "these"   |
| 5,402               | 6               | Change "abulatory" to "ambulatory"  |
| 5,403               | 15              | Insert "not" after "am"   |
| 5,531               | 9               | Change "McMurra" to "McMurray"  |
| 5,534               | 7               | Change "McMurra" to "McMurray"  |
| 5,587               | 7               | Change "Farmham" to "Farnham"   |
| 5,588               | 15              | Change "unlike" to "unlikely"   |
| 5,589               | 4               | Change "Farmham" to "Farnham"   |
| 5,590               | 1               | Change "Farmham" to "Farnham"   |
| 5,590               | 23              | Change "Farmham" to "Farnham"   |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                    |
|---------------------|-----------------|--------------------------------------|
| 5,591               | 14              | Change "contrators" to "contractors" |
| 5,591               | 23              | Change "Farmham" to "Farnham"        |
| 5,593               | 6               | Change "Farmham" to "Farnham"        |
| 5,600               | 23              | Change "location" to "relocation"    |
| 5,602               | 11              | Change "assuing" to "assuming"       |
| 5,618               | 9               | Change "how" to "now"                |
| 5,620               | 6               | Change "Devario" to "Daverio"        |
| 5,620               | 6               | Change "Farmham" to "Farnham"        |
| 5,623               | 7               | Change "plain" to "explain"          |
| 5,636               | 13              | Change "nt" to "not"                 |
| 5,646               | 16              | Change "are" to "or"                 |
| 5,650               | 2               | Change "were" to "we"                |
| 5,652               | 24              | Change "Farmham" to "Farnham"        |
| 5,654               | 16              | Insert "is" after "it"               |
| 5,655               | 19              | Change "difference" to "different"   |
| 5,657               | 20              | Change "?" to "."                    |
| 5,669               | 19              | Change "Zoegin" to "Zeugin"          |
| 5,670               | 23              | Change "Zoegin" to "Zeugin"          |
| 5,691               | 5               | Change "Farmham" to "Farnham"        |
| 5,692               | 12              | Change "Farmham" to "Farnham"        |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                              |
|---------------------|-----------------|--|
| 5,693               | 1               | Change "Farmham" to "Farnham"                  |
| 5,694               | 14              | Change "Farmham" to "Farnham"                  |
| 5,701               | 11              | Insert "haven't" after "changed"               |
| 5,704               | 5               | Insert "on" after "and"                        |
| 5,730               | 5               | Change "insread" to "instead"                  |
| 5,736               | 22              | Change "convered" to "covered"                 |
| 5,738               | 2               | Change "advise" to "advice"                    |
| 5,743               | 19              | Change "Leiberman" to "Lieberman"              |
| 5,743               | 21              | Change "Leiberman" to "Lieberman"              |
| 5,744               | 13              | Change "Leiberman" to "Lieberman"              |
| 5,744               | 15              | Change "Leiberman" to "Lieberman"              |
| 5,750               | 24              | Change "Gridge" to "Ridge"                     |
| 5,763               | 7               | Change "Sagrin" to "Saegert"                   |
| 5,763               | 17              | Change "Cordara" to "Cordaro"                  |
| 5,785               | 1               | Insert "not" after "would"                     |
| 5,787               | 18              | Change "taget" to "target"                     |
| 5,788               | 1               | Change "English" to "Spanish"                  |
| 5,829               | 25              | Change "organization by" to "organization. By" |
| 5,834               | 12              | Change "LIRO" to "LERO"                        |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>   |
|---------------------|-----------------|---|
| 5,849               | 15              | Change "in our federal agencies" to "in other federal agencies" |
| 5,852               | 11              | Change "LILCO" to "local"                                       |
| 5,862               | 7               | Change "handling" to "hailing"                                  |
| 5,863               | 9               | Change "Daverios" to "Daverio"                                  |
| 5,865               | 4               | Change "giving" to "given"                                      |
| 5,873               | 12              | Change "it in half" to "in and out"                             |
| 5,875               | 2               |   |
| 5,881               | 24              | Change "Daverios" to "Daverio"                                  |
| 5,908               | 1               | Change "one" to "in"  |
| 5,913               | 24              | Change "as" to "has"  |
| 5,952               | 8               | Change "ask" to "answer"  |
| 5,955               | 18              | Change "planning" to "planner"                                  |
| 5,963               | 19              | Change "Lieberman" to "Lieberman"                               |
| 5,963               | 23              | Change "Zuegin" to "Zeugin"                                     |
| 5,965               | 7               | Change "Leiberman" to "Lieberman"                               |
| 5,965               | 13              | Change "Maleti" to "Mileti"                                     |
| 5,968               | 25              | Change "Leiberman" to "Lieberman"                               |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>   |
|---------------------|-----------------|---|
| 5,987               | 24              | Change "on" to "one"                                      |
| 6,020               | 5               | Change "LAURENSEN" to "ZAHNLEUTER"                        |
| 6,039               | 12              | Change "plan of procedures." to "the plan or procedures." |
| 6,042               | 4               | Place a comma after the word "office"                     |
| 6,042               | 5               | Place a comma after the word "considerations"             |
| 6,042               | 14              | Change "Brookhave" to "Brookhaven"                        |
| 6,043               | 19              | Change "REC" to "RAP"                                     |
| 6,046               | 12              | Change "HobbsZ" to "Hobbs"                                |
| 6,047               | 3               | Delete the comma after the word "transmitter"             |
| 6,064               | 2               | Change "not" to "now"                                     |
| 6,067               | 8               | Change "offsite" to "onsite";<br>Change "hold" to "held"  |
| 6,073               | 5               | Change "missing" to "listing all"                         |
| 6,083               | 8               | Change "here" to "half"                                   |
| 6,085               | 2               | Change "referred to the" to "referred to in the"          |
| 6,086               | 18              | Change "plant" to "plan"                                  |
| 6,093               | 16              | Change "RENT" to "MILLER"                                 |
| 6,101               | 1               | Change "too" to "two"                                     |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>  |
|---------------------|-----------------|--|
| 6,106               | 6               | Change "because was" to "because it was"                       |
| 6,108               | 11              | Change "emergency frequency radio" to "emergency radio system" |
| 6,113               | 2               | Change "don't that" to "don't think that"                      |
| 6,126               | 20              | Change "proportion" to "portion"                               |
| 6,144               | 7               | Change "no" to "not"   |
| 6,150               | 3               | Change "protected" to "detected"                               |
| 6,151               | 13              | Change "is" to "isn't"   |
| 6,162               | 9               | Change "stimulate" to "simulate"                               |
| 6,162               | 18              | Change "got" to "go"   |
| 6,164               | 3               | Change "BOE" to "DOE"  |
| 6,169               | 5               | Add the word "he" after the word "if"                          |
| 6,190               | 21              | Change "Policy" to "Police"                                    |
| 6,193               | 2               | Change "Policy" to "Police"                                    |
| 6,194               | 18              | Change "every" to "ever"                                       |
| 6,196               | 24              | Change "Rex" to "RECS"   |
| 6,197               | 25              | Change "Rex" to "RECS"   |
| 6,202               | 10              | Change "of" to "and"   |
| 6,203               | 14              | Change "Office" to "Officer"                                   |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                              |
|---------------------|-----------------|--|
| 6,205               | 10              | Change "positive" to "possible"                |
| 6,205               | 12              | Change "the" to "they"                         |
| 6,208               | 7               | Change "that under" to "that: under"           |
| 6,208               | 12              | Do not begin new paragraph before "However"    |
| 6,208               | 13              | Begin new paragraph before "Inspector"         |
| 6,213               | 11              | Change "oong" to "long"                        |
| 6,223               | 15              | Change "MR. ZAHNLEUTER" to "JUDGE LAURENSEN"   |
| 6,465               | 25              | Change "Dr. Cordar" to "Dr. Cordaro"           |
| 6,483               | 11              | Change "offhandage of CB" to "offhand AHRC"    |
| 6,490               | 11              | Change "it's inaccurate" to "it's accurate"    |
| 6,500               | 2               | Change "and engress" to "and ingress"          |
| 6,565               | 3               | Change "was Madder (phonetic)" to "was Mather" |
| 6,568               | 15              | Change "DiVerio's" to "Daverio's"              |
| 6,573               | 2               | Change "DiVerio" to "Daverio"                  |
| 6,576               | 6               | Change "EOC NC" to "EOC/ENC"                   |
| 6,576               | 7               | Change "EOC NC" to "EOC/ENC"                   |



| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                       |
|---------------------|-----------------|---|
| 6,623               | 12              | Change "resodent" to "respondent"       |
| 6,688               | 21              | Change "aerial" to "areal"              |
| 6,734               | 18              | Change "spacial" to "spatial"           |
| 6,736               | 1               | Change "special" to "spatial"           |
| 6,736               | 6               | Change "special" to "spatial"           |
| 6,736               | 21              | Add "little" before "consequence"       |
| 6,747               | 1, 21           | Change "5-6" to "V-6"                   |
| 6,762               | 22              | Change "Hurd" to "Herr"                 |
| 6,763               | 6, 8            | Change "Hurd" to "Herr"                 |
| 6,820               | 3               | Change "93(b)" to "97(b)"               |
| 6,839               | 18              | Change "voer" to "over"                 |
| 6,839               | 24              | Change "caididate" to "candidate"       |
| 6,962               | 17              | Change "Brookhave" to "Brookhaven"      |
| 6,993               | 4               | Change "Main" to "Maine"                |
| 7,002               | 5               | Change "paly" to "play"                 |
| 7,081               | 7               | Change "neighborheed" to "neighborhood" |
| 7,081               | 19              | Change "Williams" to "William"          |
| 7,084               | 18              | Change second "Nassau" to "Suffolk"     |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                   |
|---------------------|-----------------|-------------------------------------|
| 7,091               | 9               | Change "It if" to "If it"           |
| 7,093               | 22              | Change "acquaired" to "acquired"    |
| 7,100               | 15              | Change "date" to "data"             |
| 7,101               | 19              | Change "ook" to "took"              |
| 7,101               | 21              | Change "hd" to "had"                |
| 7,102               | 7               | Change "courst" to "course"         |
| 7,247               | 17              | Change "fell" to "felt"             |
| 7,250               | 18              | Change "the State" to "they"        |
| 7,286               | 5               | Change first "the" to "they"        |
| 7,286               | 6               | Change "the" to "they"              |
| 7,292               | 18              | Change "hyrotical" to "theoretical" |
| 7,393               | 16              | Change "thing" to "think"           |
| 7,398               | 11              | Change "promptely" to "promptly"    |
| 7,400               | 24              | Change "two" to "tow"               |
| 7,400               | 24              | Change "plact" to "place"           |
| 7,402               | 14              | Change "whan" to "when"             |
| 7,408               | 14              | Change "Suday" to "Sunday"          |
| 7,416               | 22              | Change "focucing" to "focusing"     |
| 7,425               | 23              | Insert "think" after "don't"        |
| 7,434               | 16              | Change "anomly" to "anomaly"        |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                            |
|---------------------|-----------------|--|
| 7,440               | 3               | Change "Massau" to "Nassau"                  |
| 7,447               | 7               | Change "Lous" to "Louis"                     |
| 7,450               | 14              | Change "officery" to "officers"              |
| 7,467               | 18              | Change "throug" to "through"                 |
| 7,467               | 21              | Change "fort" to "sort"                      |
| 7,481               | 24              | Change second "is" to "in"                   |
| 7,487               | 25              | Change "investigations" to "evacuations"     |
| 7,530               | 10              | Change "that" to "did"                       |
| 7,550               | 24              | Change "how" to "who"                        |
| 7,565               | 15              | Change "call exactly" to "call knew exactly" |
| 7,566               | 3               | Delete "to"                                  |
| 7,566               | 12              | Change "phone" to "phone call"               |
| 7,569               | 7               | Change "grip" to "grid"                      |
| 7,582               | 23              | Change "Darell" to "Darrell"                 |
| 7,583               | 10              | Change "Darell" to "Darrell"                 |
| 7,588               | 21              | Change "impaire" to "impaired"               |
| 7,594               | 10              | Change "the" following "when" to "they"      |
| 7,595               | 12              | Change "at" to "as"                          |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                     |
|---------------------|-----------------|---------------------------------------|
| 7,614               | 12              | Change "judt" to "just"               |
| 7,617               | 15              | Change "Finlison" to "Finlayson"      |
| 7,623               | 4               | Change "car" to "card"                |
| 7,625               | 2               | Delete "in" after "been"              |
| 7,640               | 23              | Change "adequace" to "adequacy"       |
| 7,644               | 18              | Insert "that" before "require"        |
| 7,645               | 24              | Change "vent" to "event"              |
| 7,646               | 17              | Delete "want to"                      |
| 7,676               | 17              | Change "how" to "show"                |
| 7,677               | 9               | Change "of" following "plan" to "or"  |
| 7,678               | 16              | Insert space between "the" and "last" |
| 7,708               | 3               | Change "5.1.2.A" to "5.1.2.a"         |
| 7,708               | 13              | Change "exactly" to "example"         |
| 7,709               | 25              | Change "nintiate" to "initiate"       |
| 7,711               | 18              | Change "ampligy" to "amplify"         |
| 7,711               | 24              | Change "os" to "of"                   |
| 7,737               | 23              | Change "74" to "75"                   |
| 7,739               | 1               | Change "notive" to "notify"           |
| 7,742               | 20              | Change "decision" to "decisions"      |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                        |
|---------------------|-----------------|--|
| 7,744               | 4               | Change "No" to "Now"                     |
| 7,746               | 12              | Change "functions" to "function"         |
| 7,746               | 13              | Change "poll" to "pool"                  |
| 7,882               | 7               | Change "Ganne" to "Ginne"                |
| 7,882               | 24              | Change "reregistered" to "preregistered" |
| 7,887               | 9               | Change "-hat" to "that"                  |
| 7,900               | 21              | Change "Goldblat" to "Goldblatt"         |
| 7,900               | 25              | Change "Goldblat" to "Goldblatt"         |
| 7,912               | 21              | Change "energy" to "interview"           |
| 7,916               | 5               | Change "Alberton" to "Albertin"          |
| 7,916               | 23              | Change "these" to "this"                 |
| 7,917               | 14              | Change "keeping" to "keep"               |
| 7,917               | 19              | Change "tast" to "test"                  |
| 7,923               | 18              | Change "update" to "updating"            |
| 7,927               | 12              | Change "happened" to "happen"            |
| 7,932               | 8               | Change "underly" to "underlie"           |
| 7,952               | 10              | Change "partically" to "partially"       |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                         |
|---------------------|-----------------|---|
| 7,960               | 5               | Change "Kiline's" to "Kline's"            |
| 7,968               | 18              | Change "Spril" to "Spring"                |
| 7,992               | 16              | Change "substances" to "substance"        |
| 7,994               | 6               | Change "routed" to "routes"               |
| 7,999               | 19              | Change "5-8a" to "V-8a"                   |
| 8,022               | 5               | Change "Transportion" to "Transportation" |
| 8,033               | 2               | Change "Of" to "On"                       |
| 8,039               | 2               | Change "conference" to "confidence"       |
| 8,039               | 6               | Change "conference" to "confidence"       |
| 8,063               | 18              | Change "Ling" to "Long"                   |
| 8,092               | 5               | Change "trown" to "thrown"                |
| 8,094               | 15              | Change "instanc" to "instant"             |
| 8,116               | 8               | Change "buse" to "buses"                  |
| 8,123               | 16              | Change "identific" to "identified"        |
| 8,182               | 14              | Change "1908" to "1980"                   |
| 8,188               | 13              | Change "tht" to "that"                    |
| 8,193               | 2               | Change "underly" to "underlie"            |
| 8,194               | 16              | Change "underly" to "underlie"            |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>   |
|---------------------|-----------------|---|
| 8,221               | 14              | Change "assuing" to "assuming"                                  |
| 8,291               | 13              | Change "root" to "route"  |
| 8,330               | 3               | Change "4-74(b)" to "IV-74(b)"                                  |
| 8,331               | 16              | Change "4-74(b)" to "IV-74(b)"                                  |
| 8,333               | 6               | Change "5-7" to "v-7"   |
| 8,333               | 7               | Change "5-7" to "v-7"   |
| 8,335               | 22              | Change "priary" to "primary"                                    |
| 8,350               | 9               | Change "4-74(b)" to "IV-74(b)" and "appendix z" to "appendix a" |
| 8,350               | 10              | Change "4-74(b)" to "IV-74(b)"                                  |
| 8,409               | 15              | Change "O" to ")"   |
| 8,414               | 24              | Change "latter" to "letter"                                     |
| 8,490               | 11              | Change "dil" to "dual"  |
| 8,567               | 23              | Change "shet" to "set"  |
| 8,580               | 16              | Change "plant" to "plan"  |
| 8,581               | 11              | Change "Jackson" to "Jefferson"                                 |
| 8,584               | 7               | Insert "A." before "It does."                                   |
| 8,700               | 6               | Change "averting" to "averring"                                 |



| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                         |
|---------------------|-----------------|---|
| 8,739               | 13              | Change "ublic Health" to "Public Health"  |
| 8,936               | 23              | Change "1989" to "1979"                   |
| 8,941               | 18              | Change "DOE RAT" to "DOE RAP"             |
| 8,965               | 21              | Change "the Binna" to "the Ginna"         |
| 9,054               | 3               | Change "is so different" "is different"   |
| 9,070               | 24              | Change "(.)" to "(,)"                     |
| 9,088               | 4               | Change "residence" to "residents"         |
| 9,092               | 21              | Change "Meyer" to "Mayer"                 |
| 9,094               | 18              | Change "McCleskey" to "Letsche"           |
| 9,095               | 1               | Change "McCleskey" to "Letsche"           |
| 9,137               | 15              | Change "Zuegin" to "Zeugin"               |
| 9,173               | 16              | Change "ultimate we" to "ultimately they" |
| 9,178               | 12              | Change "Now" to "No"                      |
| 9,181               | 20              | Change "Kollelman" to "Koppelman"         |
| 9,209               | 16              | Change "Sinia" to "Sinai"                 |
| 9,211               | 22              | Change "by" to "my"                       |
| 9,216               | 7               | Change "plain" to "plane"                 |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                    |
|---------------------|-----------------|--------------------------------------|
| 9,218               | 1               | Change "Boses Two" to "BOCES II"     |
| 9,220               | 13              | Change "Mannerville" to "Manorville" |
| 9,220               | 13              | Change "Manner" to "Manor"           |
| 9,220               | 15              | Delete "Manner"                      |
| 9,251               | 17,22           | Change "Erickson" to "Erikson"       |
| 9,252               | 8,11,21         | Change "Erickson" to "Erikson"       |
| 9,253               | 3,13            | Change "Erickson" to "Erikson"       |
| 9,254               | 3,9,14          | Change "Erickson" to "Erikson"       |
| 9,255               | 2               | Change "Erickson" to "Erikson"       |
| 9,255               | 18,21           | Change "McIntyre" to "McIntire"      |
| 9,591               | 17-18           | Change "Rogavin" to "Rogovin"        |
| 9,611               | 17              | Change "was" to "way"                |
| 9,627               | 3               | Change "clement" to "inclement"      |
| 9,636               | 24              | Change "sort" to "short"             |
| 9,640               | 22              | Change "Ragovin" to "Rogovin"        |
| 9,645               | 11              | Change "strick" to "struck"          |
| 9,648               | 1               | Change "phrase" to "phase"           |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                   |
|---------------------|-----------------|-------------------------------------|
| 9,651               | 14              | Change "gety" to "get"              |
| 9,654               | 5               | Change "with" to "which"            |
| 9,655               | 9               | Change "or" to "of"                 |
| 9,661               | 14              | Insert "no" after "was"             |
| 9,683               | 12              | Change "rumon" to "rumor"           |
| 9,721               | 4               | Change "be" to "have"               |
| 9,740               | 1               | Change "live" to "love"             |
| 9,947               | 19              | Change "Zaunleuter" to "Zahnleuter" |
| 10,016              | 13              | Change "but" to "put"               |
| 10,049              | 18              | Change "een sthem" to "seen them"   |
| 10,160              | 11              | Change "Daverio" to "Cordaro"       |
| 10,174              | 11              | Change "contaced" to "contacted"    |
| 10,175              | 6               | Change "ransient" to "transient"    |
| 10,176              | 12              | Change "budding" to "abutting"      |
| 10,177              | 9               | Change "budding" to "abutting"      |
| 10,198              | 13              | Change "Percell" to "Purcell"       |
| 10,202              | 22              | Change "divide" to "divulge"        |
| 10,203              | 6               | Change "dissimate" to "disseminate" |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                        |
|---------------------|-----------------|--|
| 10,218              | 19              | Change "by" to "buy"                     |
| 10,239              | 22              | Change "Noah" to "NOAA"                  |
| 10,287              | 25              | Change "Aker" to "Acker"                 |
| 10,344              | 8               | Change "Aker" to "Acker"                 |
| 10,363              | 15              | Change "spole" to "spoke"                |
| 10,372              | 20              | Change "would" to "wouldn't"             |
| 10,385              | 25              | Change "RAD" to "RAP"                    |
| 10,447              | 18              | Change "ver" to "very"                   |
| 10,508              | 16              | Change "REX" to "RECS"                   |
| 10,514              | 12              | Change "REX" to "RECS"                   |
| 10,538              | 3               | Change "tract" to "track"                |
| 10,546              | 12              | Change "preds" to "press"                |
| 10,549              | 23              | Change "is" to "its"                     |
| 10,605              | 2               | Change "Frequencies" to "Frequency is"   |
| 10,610              | 4               | Change "force" to "for"                  |
| 10,623              | 16              | Change "suit" to "soup"                  |
| 10,646              | 12              | Change "are mouses" to "wear mouse ears" |
| 10,653              | 16              | Change "prophesize" to "prophecy"        |
| 10,654              | 15              | Change "prophesize" to "prophecy"        |
| 10,666              | 25              | Change "is" to "it"                      |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                                  |
|---------------------|-----------------|--|
| 10,728              | 22              | Change "soul" to "sole"                            |
| 10,730              | 20, 25          | Change "X" to "x"                                  |
| 10,732              | 9               | Change "Stephens" to "Steffens"                    |
| 10,734              | 16              | Change "Margerger" to "Marburger"                  |
| 10,753              | 12              | Change "work" to "worked"                          |
| 10,769              | 11              | Change "cite" to "citing"                          |
| 10,778              | 23              | Change "peoples decision." to "peoples' decision?" |
| 10,806              | 3               | Change "dessiminate" to "disseminate"              |
| 10,813              | 17              | Change "understanding" to "understating"           |
| 10,813              | 24              | Change "affect" to "effect"                        |
| 10,814              | 25              | Change "Artschuller" to "Altschuler"               |
| 10,815              | 1               | Change "Artschuller" to "Altschuler"               |
| 10,822              | 14              | Change "that" to "but"                             |
| 10,824              | 3               | Change "reasonable" to "reasonably"                |
| 10,833              | 11              | Change "along" to "alone"                          |
| 10,845              | 16              | Change "a Westchester" to "the Westchester"        |
| 10,857              | 11              | Change "Ruben" and "Reuben" to "Rubin"             |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                      |
|---------------------|-----------------|--|
| 10,860              | 15              | Change "interfacting" to "interfacing" |
| 10,932              | 12              | Change "highsight" to "hindsight"      |
| 10,938              | 19              | Change "A" to "Q"                      |
| 10,969              | 8               | Change "polulace" to "populace"        |
| 10,993              | 18              | Change "tiddle" to "tittle"            |
| 11,145              | 11,13,<br>14    | Change "Factor" to "Fakler"            |
| 11,158              | 24              | Change "who" to "whose"                |
| 11,185              | 17              | Change "is" to "as"                    |
| 11,186              | 21              | Change "an" to "and"                   |
| 11,186              | 23              | Change "LERP" to "LERO"                |
| 11,264              | 19              | Change "Bahr" to "Behr"                |
| 11,434              | 17              | Change "Letche" to "Letsche"           |
| 11,440              | 17              | Change "Seal" to "Seale"               |
| 11,442              | 5               | Change "Seal" to "Seale"               |
| 11,555              | 12              | Change "calling" to "culling"          |
| 11,558              | 10              | Change "EP 35" to "EP 65"              |
| 11,562              | 11              | Change "subpatters" to "subpatterns"   |
| 11,565              | 8               | Change "patters" to "patterns"         |
| 11,579              | 7               | Change "Devario" to "Daverio"          |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                         |
|---------------------|-----------------|---|
| 11,589              | 7               | Change ".3" to "Point 3"                  |
| 11,593              | 10              | Change ".3" to "Point 3"                  |
| 11,601              | 1               | Change "typicall" to "typically"          |
| 11,604              | 8               | Change "typicall" to "typically"          |
| 11,611              | 1               | Change "brining" to "bringing"            |
| 11,626              | 11              | Change "undetstanding" to "understanding" |
| 11,628              | 18              | Change "offices" to "officers"            |
| 11,664              | 10              | Change "chesser" to "cheshire"            |
| 11,693              | 22              | Change "kek" to "key"                     |
| 11,698              | 25              | Change "attendent" to "attendance"        |
| 11,715              | 14              | Change "521" to "5.2.1"                   |
| 11,765              | 25              | Change "in" to "is"                       |
| 11,837              | 23              | Change "locsl" to "local"                 |
| 11,869              | 22              | Change "roblems" to "problems"            |
| 11,891              | 16              | Change "Bahr" to "Behr"                   |
| 11,897              | 2               | Change "Weismant's" to "Weismantle's"     |
| 11,921              | 20,23,25        | Change "Bahr" to "Behr"                   |
| 11,922              | 3,20            | Change "Bahr" to "Behr"                   |



| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                           |
|---------------------|-----------------|---|
| 11,923              | 1,2,<br>5,9,12  | Change "Bahr" to<br>"Behr"                  |
| 12,012              | 19              | Change "wrrk" to "week"                     |
| 12,013              | 14              | Change "leade" to "lead"                    |
| 12,014              | 24              | Change "coordinatio" to<br>"coordination"   |
| 12,017              | 4               | Change "witnesses" to "wit-<br>nessed"      |
| 12,024              | 20              | After "were" insert "not"                   |
| 12,031              | 6               | Change "detractation" to<br>"distractation" |
| 12,055              | 2,3             | Change "David Dorff" to<br>"Davidoff"       |
| 12,068              | 16              | Change "rate" to "rare"                     |
| 12,106              | 24              | Change "Irsin" to "Irwin"                   |
| 12,120              | 11              | Change "sursue it" to "pursue<br>it"        |
| 12,702              | 12              | Change "not" to "don't"                     |
| 12,762              | 24              | Change "dat" to "day"                       |
| 12,901              | 5               | Change "tings" to "things"                  |
| 12,932              | 24              | Change "tome" to "home"                     |
| 12,946              | 13              | Change "ocen" to "ocean"                    |
| 12,947              | 13              | Change "Kowiesnis" to<br>"Kowieski"         |
| 12,963              | 2               | Change "resumptioning" to<br>"resumption"   |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                       |
|---------------------|-----------------|---|
| 13,021              | 7               | Change "gen" to "get"                   |
| 13,090              | 1               | Change "Monathan" to "Monaghan"         |
| 13,090              | 23              | Change "first" to "fire"                |
| 13,092              | 10              | Change "LIRO" to "LERO"                 |
| 13,094              | 10              | Change "policy" to "police"             |
| 13,094              | 10              | Change "of" to "or"                     |
| 13,099              | 10              | Change "hither" to "dither"             |
| 13,120              | 5               | Change "have" to "how"                  |
| 13,139              | 25              | Change "responsive" to "responsiveness" |
| 13,180              | 9               | Change "day" to "say"                   |
| 13,191              | 22              | Change "neighbords" to "neighborhoods"  |
| 13,207              | 14              | Change "now" to "know"                  |
| 13,214              | 19              | Change "scraming" to "screaming"        |
| 13,282-A            | 10              | Change "there" to "thou"                |
| 13,302              | 25              | Change "enountered" to "encountered"    |
| 13,327              | 10              | Change "interfering" to "interfere"     |
| 13,337              | 14              | Change "stree" to "stress"              |
| 13,350              | 3               | Change "thought" to "though"            |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                   |
|---------------------|-----------------|-------------------------------------|
| 13,356              | 25              | Change "MEGA" to "MAGER"            |
| 13,357              | 1               | Change "MEGA" to "MAGER"            |
| 13,357              | 2               | Change "MEGA" to "MAGER"            |
| 13,358              | 12              | Change "MEGA" to "MAGER"            |
| 13,358              | 14              | Change "MEGA" to "MAGER"            |
| 13,361              | 22              | Change "MEGA" to "MAGER"            |
| 13,361              | 24              | Change "MEGA" to "MAGER"            |
| 13,362              | 5               | Change "MEGA" to "MAGER"            |
| 13,362              | 10              | Change "MEGA" to "MAGER"            |
| 13,362              | 14              | Change "MEGA" to "MAGER"            |
| 13,363              | 8               | Change "MEGA" to "MAGER"            |
| 13,363              | 12              | Change "MEGA" to "MAGER"            |
| 13,365              | 2               | Change "MEGA" to "MAGER"            |
| 13,365              | 17              | Change "MEGA" to "MAGER"            |
| 13,393              | 24              | Change "deposotion" to "deposition" |
| 13,395              | 17              | Change "the" to "he"                |
| 13,441              | 24              | Change "stances" to "instance"      |
| 13,477              | 20              | Change "Monathan" to "Monaghan"     |
| 13,501              | 21              | Change "majorit" to "majority"      |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                 |
|---------------------|-----------------|-----------------------------------|
| 13,518              | 8               | Change "protions" to "portions"   |
| 13,546              | 26              | Change "begarding" to "regarding" |
| 13,550              | 22              | Change "filed" to "filled"        |
| 13,551              | 11              | Change "they" to "the"            |
| 13,581              | 17              | Change "means" to "teams"         |
| 13,596              | 16              | Change "IMPO" to "INPO"           |
| 13,655              | 2               | Change "isotobes" to "isotopes"   |
| 13,655              | 7               | Change "isotobes" to "isotopes"   |
| 13,655              | 10              | Change "isotobes" to "isotopes"   |
| 13,655              | 12              | Change "isotobes" to "isotopes"   |
| 13,656              | 16              | Change "isotobes" to "isotopes"   |
| 13,657              | 2               | Change "isotobes" to "isotopes"   |
| 13,657              | 6               | Change "isotobes" to "isotopes"   |
| 13,671-A            | 15              | Change "Codaro" to "Cordaro"      |
| 13,702              | 19              | Change "limin" to "limit"         |
| 13,706              | 5               | Change "FERP" to "FRERP"          |
| 13,737              | 14              | Change "341" to "3.4.1"           |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                      |
|---------------------|-----------------|--|
| 13,737              | 20              | Change "Rex" to "RECS"                 |
| 13,737              | 20              | Change "341" to "3.4.1"                |
| 13,742              | 3               | Change "Pirvo" to "Pirfo"              |
| 13,742              | 9               | Change "Pirvo" to "Pirfo"              |
| 13,742              | 16              | Change "Pirvo" to "Pirfo"              |
| 13,758              | 22              | Change "that" to "than"                |
| 13,758              | 22              | Change "that" to "then"                |
| 13,778              | 8               | Change "shild" to "shield"             |
| 13,780              | 13              | Change "what" to "want"                |
| 13,795              | 14              | Change "being" to "be"                 |
| 13,883              | 10              | Change "starting the" to "starting to" |
| 13,894              | 7               | Change "relevation" to "revelation"    |
| 13,986              | 18              | Insert "not" after "will"              |
| 13,995              | 6               | Change "Iwin" to "Irwin"               |
| 14,001              | 6               | Change "Lipski" to "Lipsky"            |
| 14,002              | 12              | Change "Lipski" to "Lipsky"            |
| 14,009              | 20              | Change "taking" to "talking"           |
| 14,013              | 20              | Change "Skaleze" to "Scalice"          |
| 14,014              | 18              | Change "Lipski" to "Lipsky"            |
| 14,015              | 3               | Change "Devario" to "Daverio"          |
| 14,036              | 8               | Change "rluppauge" to "Hauppauge"      |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                   |
|---------------------|-----------------|-------------------------------------|
| 14,052              | 15              | Change "Brodenick" to "Bordenick"   |
| 14,058              | 21              | Change " Clason" to "Clawson"       |
| 14,065              | 10              | Change "IMPEL" to "IMPELL"          |
| 14,065              | 14              | Change "IMPEL" to "IMPELL"          |
| 14,065              | 15              | Change "IMPEL" to "IMPELL"          |
| 14,065              | 19              | Change "IMPEL" to "IMPELL"          |
| 14,065              | 17              | delete "or" following "information" |
| 14,066              | 4               | Delete "of" following "health"      |
| 14,089              | 2               | Change "irridation" to "radiation"  |
| 14,092              | 21              | Change "disbursed" to "dispersed"   |
| 14,119              | 11              | Change "release" to "releases"      |
| 14,122              | 24              | Change "has" to "adds"              |
| 14,146              | 11              | Change "ignire" to "inquire"        |
| 14,153              | 6               | Change "esponde" to "sponte"        |
| 14,181              | 8               | Change "brochure" to "brochures"    |
| 14,181              | 8               | insert "an" before "annual"         |
| 14,279              | 20              | Change "physicall" to "physically"  |
| 14,283              | 17              | Change "adsorbed" to "absorbed"     |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                          |
|---------------------|-----------------|--|
| 14,316              | 5               | Change "review" to "radio"                 |
| 14,316              | 6               | Change "review" to "radio"                 |
| 14,671              | 6               | Change "Scilichi" to "Scalice"             |
| 14,671              | 6               | Delete (sic)                               |
| 14,700              | 25              | Change "your letter" to "your question"    |
| 14,729              | 21              | Change "Mr. McCleskey" to "Mrs. McCleskey" |
| 14,794              | 2               | Change "None of" to "One of"               |
| 14,871              | 3               | Change "Mr. McCleskey" to "Mrs. McCleskey" |
| 14,975              | 1               | Change "Mr. Zahn" to "Mr. Zahnleuter"      |
| 15,285              | 7               | Change "his" to "this"                     |
| 15,286              | 15              | Change "40.47" to "50.47"                  |
| 15,291              | 19              | Change "teminated" to "terminated"         |
| 15,296              | 3               | Change "And deploving" to "underplowing"   |
| 15,296              | 11              | Change "0654-2M" to "0654 II.M"            |
| 15,297              | 9               | Change "specifids" to "specifics"          |
| 15,297              | 25              | Change "L-654" to "NUREG-0654"             |



| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                   |
|---------------------|-----------------|-------------------------------------|
| 15,309              | 4               | Change "plan" to "plant"            |
| 15,319              | 8               | Change "istobe" to "isotope"        |
| 15,321              | 25              | Change "IMPEL" to "IMPELL"          |
| 15,322              | 21              | Change "Mitara" to "Mitra"          |
| 15,329              | 2               | Change "5.32B" to "5.3.2.b"         |
| 15,330              | 11              | Change "OPIP 3.51" to "OPIP 3.5.1"  |
| 15,330              | 16              | Change "OPIP 3.51" to "OPIP 3.5.1"  |
| 15,330              | 18              | Change "OPIP 3.51" to "OPIP 3.5.1"  |
| 15,330              | 25              | Change "you" to "your"              |
| 15,334              | 10              | Delete "it" following "does"        |
| 15,341              | 2               | Change "treshold" to "threshold"    |
| 15,341              | 6               | Change "Daverio" to "Watts"         |
| 15,352              | 16              | Change "0654.2.m." to "0654 II.M"   |
| 15,359              | 1               | Change "5.22" to "5.2.2"            |
| 15,363              | 21              | Change "." to ","                   |
| 15,346              | 19              | Change "estiatiated" to "estimated" |
| 15,367              | 6               | Change "Genna" to "Ginna"           |
| 15,371              | 22              | Change "20.105A" to "20.105(a)"     |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                     |
|---------------------|-----------------|---------------------------------------|
| 15,372              | 8               | Insert "no" before "guidance"         |
| 15,372              | 13              | Change "particular" to "particularly" |
| 15,374              | 7               | Change "20.105A" to "20.105(a)"       |
| 15,434              | 11              | Change "Cordado" to "Cordaro"         |
| 15,441              | 6               | Change "hamber" to "hamper"           |
| 15,452              | 23              | Change "include." to "include them."  |
| 15,466              | 16              | Add "go" after "did"                  |
| 15,471              | 3               | Change "Scalici" to "Scalice"         |
| 15,477              | 10              | Change "discention" to "descension"   |
| 15,492              | 21              | Change "explain" to "explained"       |
| 15,505              | 24              | Change "not" to "no"                  |
| 15,509              | 21              | Add "do not" after "just"             |
| 15,519              | 4               | Change "had" to "made"                |
| 15,522              | 22              | Change "fuctions" to "functions"      |
| 15,526              | 14              | Change "reducting" to "reducing"      |
| 15,527              | 15              | Change "legall" to "legally"          |
| 15,538              | 11              | Change "lest" to "less"               |
| 15,539              | 18              | Change "isotobes" to "isotopes"       |

| <u>Tr. Page No.</u> | <u>Line No.</u> | <u>Correction</u>                 |
|---------------------|-----------------|-----------------------------------|
| 15,540              | 25              | Change "trangient" to "transient" |
| 15,544              | 14              | Change "synes" to "sinks"         |
| 15,555              | 10              | Change "gases" to "casks"         |
| 15,608              | 9               | Change "requeted" to "requested"  |
| 15,621              | 2               | Change "isotobes" to "isotopes"   |
| 15,621              | 15              | Change "isotobes" to "isotopes"   |
| 15,621              | 18              | Change "isotobes" to "isotopes"   |
| 15,679              | 8               | Change "home" to "whole"          |
| 15,687              | 24              | Change "portect" to "protect"     |

ATTACHMENT 14

Quarantelli, E.L. and Dynes, R.R., 1972, Images of Disaster  
Behavior: Myths and Consequences, Ohio State University

popular images of disaster behavior. It is to this evaluation that we wish to turn next.

It is important to note at the outset, however, that the term disaster is one of those sponge words in the English language which usually covers anything which a speaker thinks to be unfortunate. As we will use it here, a disaster is an event caused by an agent, i.e., an earthquake, hurricane, flood, fire, etc., which creates extensive physical impact which affects existing social organization. Since various types of agents have differential effects, the modal case used in the subsequent discussion is to look at the actual behavior which occurs as the consequence of sudden and widespread impact in an American urban community, such as an earthquake or tornado striking a large city. What we will have to say, however, has considerable applicability to the consequences of other types of stress agents and, with adjustment for the level of development, also would roughly apply to similar situations in societies other than the United States. In research in other countries, we have always been more impressed by the similarities of disaster behavior than by the differences. In the discussion which follows, although we will at times cite specific studies, we will primarily draw on our knowledge of the research tradition as well as our own personal field experience in examining the validity of the popular images.

#### Typical Disaster Behavior

1. The idea that people will panic in the face of great threat or danger is very widespread. However, it is not borne out in reality. Insofar

hordes of animal-like creatures fleeing wildly and acting hysterically when they find themselves in danger, what actually happens is somewhat duller but also more reassuring than dramatic license portrays.

2. Just as the panic image of disaster behavior is generally incorrect, so is the view that disasters leave victims dazed and disoriented both at time of impact and in the recovery period. Those who experienced disasters are not immobilized by even the most catastrophic of events. They are neither devoid of initiative nor passively dependent and expectant that others, especially relief and welfare workers, will take care of them and their disaster created needs. In fact, disaster victims sometimes insist in acting on their own even contrary to the expressed advice of the public authorities and formal agencies.

A form of shock reaction, called a "disaster syndrome," has sometimes been observed in the aftermath of relatively sudden and extensive disasters. This reaction involves a state of apathy leading to a regression in normal cognitive processes. However, the "disaster syndrome" does not appear in great numbers of people; seems confined only to the most sudden traumatic kinds of disasters; has been reported only in certain cultural settings; and is generally of short duration, hours only, if not minutes. One study of an extremely extensive tornado, using an area probability sample, found that only 14 percent of all victims may have manifested some aspects of the initial stages of the syndrome.

In general, disaster victims react in an active manner, and do not wait around for assistance by outsiders or offers of aid from organizations. On



Since personal experience with disaster impact is so infrequent and difficult to arrange, the major impressions of disaster behavior come from accounts in the mass media. This is true even for those who are in the impact area and, of course, the media reports are the only initial source for those outside. The major effect of the media coverage is often only to pool other people's misconceptions and to report them. This, in large part, is due to the conditions for the coverage of news as well as to certain well established norms within the mass media industry.

In the first place, reporters also have images of what should happen and, in the absence of contrary evidence, often report these images. For example, during the massive evacuation in Hurricane Carla, a wire service story, carried as a headline in some newspapers stated that in parts of Texas "more than 100,000 persons fled in near panic." A later systematic study showed that this report was false insofar as the conditions of the evacuees was concerned. In fact, the study made of that behavior particularly commented on the extraordinarily low accident rate despite the fact that a half million people fled; involvement in traffic accidents or delays enroute because of them was reported by only .6 percent of the evacuees and no fatalities at all resulted from the massive movement of cars during the evacuation. Given the normal condition of traffic and traffic fatalities this was probably one of the most interesting aspects about this particular instance of disaster behavior. However, the mass media people who reported the story seemed to have presupposed that fleeing people are 'panicky' and reported it as such.



Hans, J.M. and Sell, T.C., 1974, Evacuation Risks - An Evaluation, U.S. E.P.A Office of Radiation Protection

of the National Motor Vehicle Accident Death Rate to estimate the risk of death in an evacuation permits a reasonable approximation of the risk. Furthermore, there does not seem to be any activity with a risk of death, other than motor vehicle transportation, that can be more closely related.

Other justifications for basing risk estimations on the National Motor Vehicle Accident Death Rate follow:

1. Since more than 99 percent of the movement of people in an evacuation is by motor vehicle, the probability is great that accidents could occur involving vehicles.
2. Accident rates at home or work are not comparable to situations encountered away from home at motels or reception centers.
3. A state of "panic" does not exist during an evacuation which would result in reckless and high-speed driving (18). The evacuations were very orderly and vehicle traffic tends to move at relatively low speeds (35 mph is the average). Nationally, 74 percent of traffic accident fatalities occur at speeds greater than 40 mph (18). At least 50 percent of the National Motor Vehicle fatalities have been attributed to drinking (18), whereas drunk-driving has not been observed in evacuations (17). From published reports (16,20) and observations of personnel familiar with evacuation, traffic moves at a much slower rate, and cannot even be compared to commuter traffic leaving a city. The slowdown is caused both by the fact that there is more traffic on the highways and feeder routes and that more personnel are involved in traffic control.
4. The daily death rate per 100,000 persons from all accidents (0.15) is about two times higher than the daily death rate per 100,000 persons from motor vehicle accidents (0.07). All accidents include many situations such as poisoning, railroad deaths, industrial accidents, etc., which would be dissimilar to circumstances in an evacuation. The dissimilarities of conditions of death rate calculated for all accidents with evacuation conditions seem to justify using the lower motor vehicle death rate for predictions of evacuation death risk. However, with the other uncertainties that exist, a factor of two higher in the predictions would not be unreasonable.

injuries that occurred in the events investigated? Most of the questionnaires were completed by persons on a local level who were intimately involved with the particular incidents and their recall of the events was generally very good. Some documentation of the deaths and injuries associated with an evacuation has occurred. These have been reported in "Carla" involving the largest evacuation studied (500,000 persons) (16). Verbal confirmation that no injuries or deaths have resulted from evacuations in one state has been obtained (21). This can be further confirmed because no compensation claims (permissible under law) have been filed to this effect (21).

#### Deaths

It seems reasonable to conclude that the number of deaths is a fairly accurate number. In most of the incidents investigated, the number of evacuees was less than a few thousand. Because of the relatively small number of people involved, a few deaths would attract sufficient attention, so that the cause of death would be ascertained, recorded, and the results reported. This may not be as true in a large disaster where hundreds of people are killed. That is, in these situations, whether the person died because of something that occurred during the evacuation or for some reason initiated by the disaster probably has less certainty. However, the numbers of these types of disasters are small. Other events which were investigated during the study, although involving the evacuation of a relatively large number of people, had few or no deaths due to the disaster agent. In these situations, again, one or two deaths would stand out.

The general conclusion is that the number of deaths reported during the study is reasonably accurate. It is unrealistic to believe that the reported ten deaths could be low by a significant factor.

#### Injuries

Although the number of deaths reported appears to be a reasonably accurate reflection of the true number, the reported number of injuries (two) attributed to the evacuation process seems low. This conclusion is based only upon reasonable doubt and cannot be substantiated. The definition of an injury used in the study was an injury serious enough to require medical attention. Even though it is believed that the non-fatal injuries due to vehicle accidents witnessed in the study is lower than normal, it seems logical to assume that other types of injuries do occur that may not have if the people were not evacuated. This is not to imply this rate is higher or lower than normal, but the study data (two injuries) probably has a higher degree of inaccuracy than the death rate.

It is thought that the lack of credibility is not due to the numbers reported by the responders, but that there is no reporting system for injuries comparable to the registry for death. There is not a reliable, established mechanism for collecting injury statistics, unless they are traffic-connected or needed for legal liability. Consequently, unless occurring in significant number and degree, they may be overlooked.

Comparison of predicted and observed risk of injury and death

As an example of an estimation of prediction of death and injury during an evacuation, based on the application of the National Highway Statistics, Hurricane Carla was chosen. This evacuation was not included in the estimate of risk (tables 10, 11, and 13) because the number of persons involved, the average number of miles evacuated, and other details were not known with the desired accuracy. It is used here as a disaster to which a projection of the risk of death and injury might be applied for certain assumptions and compared with actual results which did occur.

Hurricane Carla (16, 22, 23) affected the states of Texas and Louisiana from September 3 to 14, 1961, and caused the largest evacuation in American History. It was estimated that between 50,000 and 80,000 persons were evacuated in Louisiana and between 300,000 and 800,000, with the most reasonable estimate of 500,000, persons were evacuated in Texas.

The Head of the Texas Department of Public Safety called it "the wettest dry run in mass evacuation in the history of America" (16). In the movement in Texas there was not a single fatality attributable to the evacuation. There was not even a reported major accident (16).

Based upon data obtained from Hurricane Carla and the recommended death and injury prediction, table 16 was derived. As observed in table 16, using the National Motor Vehicle Accident Death and Injury Rate (tables 10 and 13), more deaths and injuries were predicted than observed in one incident only--Hurricane Carla.

If the same rationale were applied to the 63 other events investigated, in all but four, the results would be approximately the same as for Hurricane Carla. The predicted values

Dynes, R.R., Quarantelli, E.L. and Kreps, G.P., A Perspective  
on Disaster Planning, 1981, Ohio State University and William  
and Mary College



There is, furthermore, a frequently overlooked but fundamental difference between panic and flight behavior. The two terms both refer to withdrawal from a situation; they are otherwise not equivalent. Panic behavior is where the individual flees without any consideration for others. But the vast majority of withdrawal behavior takes the form of flight behavior. Flight from a threatening situation involves playing traditional social roles including the taking care of others. Drabek in a study of sudden evacuation in the face of an immediate flood threat in the Denver metropolitan area in 1965 found that 92 percent of family members left together, confirming a hypothesis advanced some time ago by Moore in Texas hurricanes that families moved as units and remained together despite public pressure at times to do differently.<sup>3</sup> Even in very precipitous flight, fleeing groups often make attempts to assist strangers in getting away from a seemingly immediately dangerous situation. Mutual aid rather than panicky abandonment of others is a very manifest characteristic of withdrawal behavior in the presence of danger.

Furthermore, if panic does occur in a disaster situation it is almost never on a large scale. Panic episodes tend to be extremely localized, involve very few participants, and are of very short duration. One observer who has been studying panic behavior for the last twenty years suggests that he would be hard pressed (outside of a military context) to cite more than a small handful of clear-cut instances of panic behavior where more than three or four dozen people were involved at the most. The often cited example of the "panicky" reaction to the famous Invasion from Mars broadcast, upon close examination, shows there was extremely little behavior leading to the cessation of traditional role playing or much flight behavior for that matter. In fact, one survey study of the event reported that 84 percent of the audience was in no way even disturbed by the broadcast.<sup>4</sup> Many supposed instances of "mass panic" upon serious examination turn out to be crisis situations where some people were frightened or concerned but whose behavior took forms other than unruly flight or disorganized activity.

Even in those rare situations where panic on a small scale does occur, the majority of persons involved in such situations seldom engage in panic behavior. Even in such historically famous cases as the Cocomanut Grove night club fire, the available evidence fairly clearly suggests that panic was not the modal form of withdrawal even in that highly circumscribed emergency situation; actually many persons died from asphyxiation before they could realize there was danger. The majority that escaped generally sought out alternate escape routes in a reasonable fashion with friends. Here as well as in other similar situations there was none of the widespread contagion that a panicky reaction is supposed to evoke automatically among those exposed to it. There was of course some panic behavior in this situation as well as other famous cases such as the Iroquois Theater fire. But it requires a very unusual set of circumstances involving perceptions of probable personal entrapment within a limited spatial area, possible closing of escape routes, an extremely sudden and very direct threat to life, as well as abandonment of self by others in the immediate vicinity to have the possibility of panic behavior. These are a combination of circumstances that on the whole are usually not present in any degree from most disaster situations.

Sometimes the term panic is also applied to extremely disorganized personal behavior, where the individual almost literally collapses in an hysterical

breakdown. This phenomenon so rarely occurs in disaster situations that it is not a practical problem. Of the many possible ways of responding to signs of danger, this is an extremely unlikely probability for any given individual and it is only a highly remote theoretical and statistical possibility if reference is to any large group or aggregation of persons so reacting in a crisis. When people see signs or receive warnings of danger, they generally assess the credibility of the information and the likelihood of danger to themselves and others. If the cues they receive are viewed as credible, alternative courses of action are considered. An old pre-Mao Chinese proverb notes the rational, adaptive nature of one alternative possibility: "Of the thirty-six ways to escape danger, running away is best." Accordingly in some cases endangered persons will see withdrawal from the danger as the most intelligent step possible in the given situation. They will then move out of the situation taking others with them. While this is not as dramatic a picture as one frequently drawn by fiction writers of hordes of animal-like creatures fleeing wildly and acting hysterically when they find themselves in danger, what actually happens is somewhat duller but also more reassuring.

2. Just as the panic image of disaster behavior is generally incorrect, so is the view that disasters leave victims dazed and disoriented both at time of impact and in the recovery period. Those who experienced disasters are not immobilized by even the most catastrophic of events. They are neither devoid of initiative nor passively dependent and expectant that others, especially relief and welfare workers, will take care of them and their disaster-created needs. In fact, disaster victims sometimes insist in acting on their own even contrary to the expressed advice of the public authorities and formal agencies.

A form of shock reaction, called a "disaster syndrome," has sometimes been observed in the aftermath of relatively sudden and extensive disasters. This reaction involves an apathetic response and some disorientation in thinking. However, the "disaster syndrome" does not appear in great numbers of people; seems confined only to the most sudden traumatic kinds of disasters; has been reported only in certain cultural settings; and is generally of short duration, hours only, if not minutes. One study of an extremely extensive tornado, using an area probability sample, found that only 14 percent of all victims may have manifested some aspects of the initial stages of the syndrome.<sup>5</sup>

In general, disaster victims react in an active manner, and do not wait around for assistance by outsiders or offers of aid from organizations. On a large scale they show considerable personal initiative and a pattern of self and informal mutual help. When shelter is needed for example, displaced persons seek the aid of and move in with other family members, intimates and neighbors. When about 10,000 were made homeless in a tornado in Massachusetts, less than 5 percent sought aid from and were housed by the public authorities.<sup>6</sup> In the massive evacuation preceding Hurricane Carla mentioned before, more than three-quarters of the evacuees went to other than public shelters; 58 percent in fact went to private homes of friends and relatives.<sup>7</sup> In a California flood, only 9,260 persons out of over 50,000 evacuees registered in the 38 Red Cross shelters available in 13 towns in the disaster area.<sup>8</sup>

This pattern of mutual and self help also prevails in other disaster-related activities besides that of obtaining shelter. In one community emergency after



clearly was no evidence of high incidents of serious emotional disorders either in children or adults which could be associated with the disaster.<sup>12</sup> The victims were able to function well in their recovery efforts. Another study showed that in the months following Hurricane Carla, there was not only a drop in neurological and psychiatric classifications in both out-patient as well as in-patient clinics in the impacted areas, but also a diminution of symptoms among neurotic and psychotic patients.<sup>13</sup> In other words, disasters not only fail to evoke paralyzing emotional reactions among previously healthy persons, but they do not even make previously mentally ill or disturbed persons any worse.

These kinds of observations parallel what has been observed also in wartime situations, either among civilians or the military. Even under very severe stress, people do not become either totally irresponsible and dependent, or completely impotent and immobilized. Rather they attempt to solve in an active fashion, especially in conjunction with others, both their short-run and long-run problems in those ways which seem reasonable to them as they perceive the crisis situation. In general, the same can be said of the vast majority of disaster victims as generally has been said of combat soldiers by Gringer and Spiegel: "Under the most harrowing circumstances, they are able to control fear or anxiety, to think clearly and to make appropriate decisions with rapidity."<sup>14</sup>

3. The assumption that local organizations are unable to cope with disasters is based both on the notion that these organizations and the communities in which they are located are overwhelmed by disaster impact, and also by the fear that the employees of these organizations are so affected by disaster impact that their efficiency is reduced. Neither of these notions stands up well under close observation.

The notion of communities being overwhelmed is usually derived from over-estimating the amount of disaster-occasioned demand on facilities and under-estimating the number of resources still available after impact. In all disasters in recent years in the United States, the amount of destruction in relation to total resources is quite low; the same is true with regard to the ratio of casualties to the total population base involved.

For example, Anchorage, the largest city in Alaska, had about 50,000 persons with an additional 50,000 in the surrounding areas, including a large number of military personnel. The metropolitan area did experience extensive property damage in the 1964 Alaskan earthquake, but only one hospital eventually had to be evacuated. The earthquake occurred at 5:36 on a Friday evening. Practically all of the victims of the impact were found and removed before dark on the first night. There were five hospitals in Anchorage, two of them private, and nearly all of the casualties were brought to one hospital. Of its 155 beds, only 75 were occupied at the time of the earthquake. From the time that the first casualty arrived at 6:15 p.m. until midnight, 21 casualties were received; three were dead, seven were admitted and the rest sent home. In the next two days, this hospital handled 89 emergencies; of these 18 were clearly earthquake victims while the rest were "normal" emergencies and persons injured while working with debris. At no time did inpatient census exceed 123 during the emergency. While the death rate in the Anchorage area as a result of the earthquake was finally determined to be seven, this is a much lower figure than initial reports suggested and that most persons remember. (In the entire state, the overall figure was close to 100.)

CERTIFICATE OF SERVICE

In the Matter of  
LONG ISLAND LIGHTING COMPANY  
(Shoreham Nuclear Power Station, Unit 1)  
(Emergency Planning Proceeding)  
Docket No. 50-322-OL-3

COLLECTED  
USNRC

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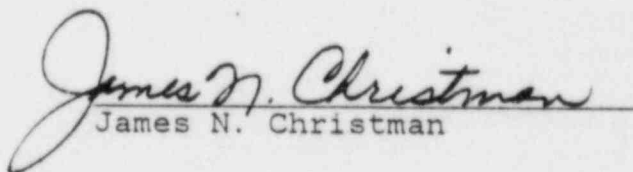
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