SECRETARY OF LABOR,

Complainant,

v.

BEVERLY ENTERPRISES, INC.,
d/b/a RICHLAND MANOR,
MEYERDALE MANOR, CARPENTER
CARE CENTER, BEVERLY MANOR
OF MONROEVILLE AND BLUE RIDGE
HAVEN CONVALESCENT CENTER
WEST, AND ITS SUCCESSORS,

Respondent.

SERVICE EMPLOYEES INTERNATIONAL
UNION, LOCALS 668 & 1199P,

Authorized Employee Representative

Docket Nos. 91-3144, 92-238, 92-819, 92-1257,
93-724

DECISION

Before: ROGERS, Chairman; VISSCHER and WEISBERG, Commissioners.

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BY THE COMMISSION:

INTRODUCTION

In these cases the Commission addresses for the second time issues relating to ergonomics hazards under 29 U.S.C. § 654(a)(1), section 5(a)(1) of the Occupational Safety and Health Act of 1970, 29 U.S.C. §§ 651-678 (1970) ("the Act"). This provision, the so-called "general duty clause," requires that, where there is no occupational safety and health standard applicable to the working conditions in question, employers must provide their employees with a workplace "free from recognized hazards that are causing or are likely to cause death or serious physical harm." In our first decision involving such issues, *Pepperidge Farm, Inc.*, 17 BNA OSHC 1993, 1995-97 CCH OSHD ¶ 31,301 (No. 89-265, 1997), the Commission concluded that the employer in that case recognized the hazard presented by work practices under which its employees suffered back and shoulder injuries and experienced lower back pain ("LBP") from lifting heavy objects in a manufacturing

facility.[1] In the cases now before us we are asked to consider whether nursing assistants ("NA's")[2] who experience LBP while lifting and moving residents in nursing homes were exposed to a recognized hazard in violation of section 5(a)(1). For the reasons that follow, we conclude that Administrative Law Judge John H. Frye III erred in concluding that the Secretary of Labor ("Secretary") failed to prove the alleged violations of section 5(a)(1). We reverse and remand.

Beverly Enterprises, Inc. ("Beverly") is a for-profit corporation which, at the time these cases arose, operated over 800 long-term care (nursing home) facilities in the United States. The Secretary conducted an inspection following complaints by employees of unsafe working conditions at five Beverly nursing homes in Pennsylvania, part of Beverly's Northeast Region: Richland Manor in Johnstown, Meyersdale Manor in Meyersdale, Carpenter Care Center in Tunkhannock, Monroeville Manor in Monroeville, and Blue Ridge Haven Convalescent Center West in Camp Hill.[3] The Secretary then issued citations alleging that Beverly violated section 5(a)(1) at these five facilities because the lifting and transferring tasks performed by its NA's exposed them to the hazard of injuries to the back and upper extremities.

In vacating these citations, Judge Frye concluded that the Secretary's definition of the recognized hazard as set forth in the citations and pleadings failed to comply with case law requiring that the alleged hazard be described in terms sufficiently specific to afford the employer fair notice of the charge against it. He also concluded that the Secretary had failed

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[1]In *Pepperidge Farm* the Commission also concluded that a recognized hazard of repetitive motion existed in the employer's facility. The relevance to these cases of that portion of *Pepperidge Farm* dealing with repetitive motion is discussed *infra*.

[2]For purposes of the Medicare provisions of the Social Security Act, a "nurse aide" is an individual who provides "nursing or nursing-related services to residents in a skilled nursing facility" other than a "licensed health professional," such as a registered professional nurse or licensed practical nurse. 42 U.S.C. § 1395i-3(b)(5)(F) and (G). Requirements for training and competency evaluation of NA's are set forth at 42 U.S.C. § 1395i-3(b)(5)(A)-(E).

[3]For purposes of this decision we will refer to these facilities, respectively, as "Richland Manor," "Meyersdale," "Carpenter Care," "Monroeville," and "Blue Ridge."

to demonstrate that the working conditions in Beverly's facilities presented a hazard to its employees. We reverse the judge's decision on these two issues. We find that while the Secretary in her initial pleadings may not have precisely defined the recognized hazard in issue, at the time of the hearing the parties plainly understood that the issue they were litigating was whether the particular types of lifts in which Beverly's NA's were engaged presented a hazard. We further find that the Secretary proved that there is a substantial likelihood that these NA's could suffer LBP as a result of their lifting activities and that the level of this risk is sufficient to require that Beverly implement corrective measures under section 5(a)(1).

We also address the remaining elements of an alleged violation of section 5(a)(1) which the judge did not consider.[4] We find that Beverly's employee training program "Lift with Care" as well as memoranda and other correspondence from Beverly's officials establish that Beverly recognized the hazard to its NA's and that experts familiar with the nursing home industry similarly recognize lifting and transferring of residents to be hazardous to NA's. We also find that Beverly's methods of lifting are likely to cause LBP, a severe, chronic, and debilitating condition that constitutes serious physical harm. We conclude, however, that a remand is appropriate on the issue of feasible means of abatement. Accordingly, we reverse the judge's decision and we remand for further proceedings on the issue of feasibility.

FACTS

Activities of NA's and Lift Methods Used

[4]To prove that an employer violated section 5(a)(1), the Secretary must prove that the cited employer failed to free its workplace of a hazard, that the hazard is recognized by the employer or by its industry, that the hazard is causing or is likely to cause serious physical harm, and that feasible means existed by which the hazard could be materially reduced or eliminated. *Pelron Corp.*, 12 BNA OSHC 1833, 1835, 1986-87 CCH OSHD ¶ 27,605, p. 35,871 (No. 82-388, 1986). In view of his disposition, Judge Frye did not reach the questions of recognition, likelihood of serious injury, or existence of feasible abatement methods.

A substantial number of the residents at these nursing homes[5] are unable to stand, support themselves, or move from place to place without the assistance of the NA's. Generally speaking, Beverly recognizes two categories of residents depending upon the level of assistance required—those who can bear some weight but require some degree of assistance in getting around and those who are completely non-weight-bearing. Those who cannot assist at all include "contracted" residents, that is, residents who have nonfunctional limbs drawn up close to the body. There are also some residents who are regarded as combative, that is, resistant to being lifted.

NA's perform a number of tasks involving lifting, moving, or transferring residents[6] including weighing residents, dressing them, helping them to the bathroom, and taking them to get a shower or bath or to the dining room or beauty shop. Depending upon their needs, residents may be lifted or transferred between their bed and wheelchair or other transportation means, between their means of transportation and the commode or shower chair, between the shower chair and the commode, and to and from the scale chair or tub chair. Residents who cannot sit up in a wheelchair are lifted onto and off of a geri-chair, gurney, or lounge chair when they are taken to a shower, the residents' lounge, or back to bed. Totally bedridden residents must periodically be repositioned in the bed and moved in order

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[5]This summary of the fact portion of the case is a composite of the evidentiary record presented as to all five facilities. Although the judge attempted to limit duplicative testimony, and the parties stipulated to some facts regarding work practices at the various facilities, the parties claimed before the judge that there were sufficient differences among the five facilities to require that the tasks of the NA's, the lifting practices and transferring practices, and the conditions of residents be fully litigated separately with respect to each facility. In their briefs before us, the parties concede that while the facilities vary to some extent in terms of such matters as the weights of residents and the availability of mechanical lifting devices, the differences are not of such a magnitude that would affect our disposition of any of these cases. Any relevant facts specific to individual facilities are so noted in this decision.

[6]One NA testified that a lift is a movement of a non-weight-bearing resident; movement of a resident who can bear some weight is called a transfer.

to be washed, dressed, and have their bed pads changed, which involves some lifting up off the bed.[7] Some otherwise bedridden residents can be placed in a geri-chair or reclining chair for at least a portion of the day and, if incontinent, may have their pads changed while they are in the chair or may be placed back in bed to be changed, and some residents who remain in their chairs for the full day or in their beds for long periods have to be periodically repositioned as well, all of which entails additional lifts. During the night shift, residents frequently have to be moved about; their pads must be changed as needed and those who do not turn in their sleep must be repositioned every two hours under government regulations applicable to nursing care. Depending upon the facility and the level of dependency of the residents, the number of residents assigned to each NA varied from a low of 7 to a high of 18, and the number of times each resident would have to be lifted each day varied from 5 to 10. Generally speaking, NA's could be expected to perform approximately 50-55 lifts per day.

A common solo lift method is the "hug" lift. The NA will either carry a light resident as one would carry a baby or, more commonly, will stand either facing or behind the

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[7]One NA, Crystal Rector, who worked on a floor at Blue Ridge housing mostly bedridden residents testified that those residents were given a special type of bed in which it was easier to reposition the resident than in the normal bed but more difficult to turn or otherwise move the resident. In addition, these beds were about 4 to 4½ feet high, requiring the NA to stand on a platform while turning and repositioning a resident. As Rector testified, "you were more or less reaching over to turn them as opposed to the regular beds where you . . . could stoop down and be on the level and get your knees down to pull and position and give you support. Up on those beds you were more or less pulling going upwards so it [was] harder."

There is other evidence that the height of beds was a factor making the NA's tasks more difficult. Donna Connery, administrator of Carpenter Care, informed Patty Benesh, Beverly's corporate Manager of Safety and Loss Control for its Northeast, Great Lakes, and North Central regions that adjustment mechanisms were defective on some beds preventing the beds from being lowered. Benesh authorized new beds to be purchased. She did not indicate when this purchase occurred. One Richland NA, Mary Lou Krupka, said that some beds didn't lower enough and that she was injured when lifting a resident from a wheelchair into the bed.

resident, put her[8] legs around the resident, place her arms around the resident under the resident's shoulders or around the waist, and lift and pivot the resident onto the chair or bed. While some NA's said that they would only use the hug method on residents who could partially assist the lift, other NA's did not make such a distinction. If the resident cannot bear weight in a standing position, the NA will seat the resident on the bed and lift the resident from the bed. A non-weight-bearing resident may or may not be lifted so high that the resident's feet clear the floor, but unless the resident is a partial-assist, the NA will bear the full weight of the resident, generally between 100 and 200 pounds, although some residents are much heavier. In a 2-person lift method, one NA will lift the resident's back and underarm area while another NA lifts the resident under the knees, or alternatively both NA's will lift the resident from under the arm on each side. The latter is known in medical terms as an "under the axilla" lift. From a standing position the resident can be pivoted, or turned, as necessary. Either the hug method or a variation of the 2-person lift in which each NA would lift the resident by one arm and a leg was used for moving residents in and out of shower chairs. Residents who are bedridden and heavy have to be lifted from bed by three NA's, one lifting the arms, one lifting the feet or legs, and one in the center pulling the sheet or pad under the resident. Incapacitated residents such as stroke victims may also be lifted on a blanket by two to four NA's according to the weight of the resident. One NA recounted an incident in which six or seven NA's lifted a resident who weighed over 300 pounds from bed to a gurney.

None of the facilities had any established procedures for an NA to obtain assistance to perform a 2-person lift other than asking other NA's for help, and it was not mandatory for one NA to assist another. There was consistent testimony by NA's that frequently they performed solo lifts where two NA's were really needed because they were unable to locate another NA, and supervisory nursing personnel were unavailable or unwilling to assist. Some

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[8]Beverly employs some male NA's. The ratio of female to male NA's varies from about 3-to-1 at Blue Ridge to 9-to-1 at Monroeville. For reasons which are unexplained in the record, only female NA's testified at the hearing.

NA's said that occasionally Charge Nurses[9] would assist, but it was not common for them to do so whereas others said that nurses would try to help as much as possible consistent with their other duties. This testimony is generally consistent with that of Beverly's Charge Nurses and other supervisors, who indicated that they would give assistance to NA's if requested to do so.

Mechanical lifts such as the Hoyer lift[10] were not always readily available. Additionally, Hoyer lifts even if available were not always in proper operating condition or were missing the necessary lift pads and chains. Some NA's testified that they always obtained the Hoyer lift even if it took time to locate the lift or its accessories; others said that the Hoyer lift was simply dispensed with.[11] Although the Secretary's expert, Dr. Bernice Owen, was of the opinion that mechanical lifts should be used for lifting and transferring *all* non-weight-bearing residents, there is considerable contrary testimony from NA's and supervisors at all of the facilities here that for the safety of both residents and NA's, mechanical lifts are not suitable for use with combative residents.[12]

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[9]Charge Nurses supervise the NA's and the residents' care and daily activities.

[10]The Hoyer lift is an outmoded design which dates from the 1940's. It is mechanically operated by a crank whereas newer type lifts operate by electric motor powered by batteries. Although there are two manufacturers of Hoyer-type lifts, Hoyer and Invacare, "Hoyer" is commonly used as a generic term to refer to any manual mechanical lift.

[11]However, Beverly's supervisory nurses at Meyersdale stated that to their knowledge, no NA had ever had to manually transfer a resident because a hoist was not available nor had any NA ever complained that there were not enough mechanical hoists.

[12]For example, they testified that combative or agitated people can fall out of a hoist and in any event such individuals are far more difficult to lift in a hoist than docile persons. Carpenter Care had a resident with osteoporosis for whom it claimed that lifting in a mechanical lift would be uncomfortable and unsafe. There are also some differences among mechanical lifts in terms of the types of residents who can be lifted. The Sara lift can only be used with residents who have some motor control over their limbs whereas the Maxilift is intended for use with residents who have more physical difficulty in moving their legs or

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Training Given to NA's

The parties do not dispute that there are no written industry rules or standards regarding the types of lifting techniques that should be used for residents of different weights or the types of residents who should be lifted by mechanical lifts. NA's were not given any other guidance as to what factors to take into account or how to determine what lifting method was appropriate for any particular resident. Beverly's position is that in accordance with recognized social policies regarding restorative care,[13] no general corporate policy or guidelines are possible because the appropriate method can only be determined on a case-by-case basis through an evaluation of each resident using accepted nursing criteria.[14]

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[12](...continued)
other parts of the body. For instance, there is evidence that unlike the Maxilift, the Sara lift could not be used to move a quadriplegic or very heavy patient and that a Hoyer lift was used in cases of a resident who is an amputee or a resident with multiple sclerosis.

[13]Beverly represents that a requirement at least to preserve and to the extent possible to enhance a resident's ability to perform daily living activities is set forth in 42 U.S.C. § 1395i-3(b) and 42 C.F.R. §§ 483.20(a), (b), & (d) and 483.25(a). The relevant statutory provision states that "a skilled nursing facility must care for its residents in such a manner as will promote maintenance or enhancement of the quality of life of each resident."

[14]It does appear, however, that individual facilities developed their own policies in the absence of general corporate guidance. Initially, Monroeville did not require that a mechanical lift be used except in the case of one or two residents for whom a mechanical lift was specified. After the inspection commenced, Monroeville's administrator, Wieczorek directed that mechanical lifts be used for total (full-assist) lifts for all residents weighing over 150 pounds. On the other hand, Susan Mahler, Assistant Director of Nursing at Richland Manor, was opposed to a strict rule requiring that all total-assist residents above a certain weight be lifted in mechanical lifts because such a policy would preclude the staff from evaluating the resident's potential to become less dependent. She referred to a specific case in which an obese resident improved to the point where she became a very minimal assist. Her counterparts at Carpenter Care, though, would not recommend a manual lift for any resident who was completely non-weight-bearing except in the case of a resident who suffered from osteoporosis and arthritis. Gloria Eastwood, Assistant Director of Nursing at Carpenter Care, was of the view that a mechanical lift should be used with residents susceptible to severe skin tears in order to prevent further injury.

Beverly provided a basic orientation to new employees, covering such subjects as taking residents' vital signs, fire hazards, and how to make beds. Some NA's said they were not shown how to lift residents other than lifting a resident from bed to wheelchair in conjunction with instruction on making beds, but Beverly managers testified that the orientation did cover transferring and lifting of residents and that experienced NA's were required to demonstrate the techniques to those newly-hired. NA's also testified that they were not instructed as to when they should lift by themselves, when they should lift with assistance, and when they should use the Hoyer lift, nor, according to one NA, were they cautioned about the potential for back injuries. There is no dispute, however, that new hires were shown what method to use to lift each resident by other NA's with whom they were assigned to work for initial on-the-job training ranging from a few days to two weeks. However, neither the orientation or initial on-the-job training gave NA's specific instruction in how to determine, or what criteria, such as weight, to take into account in deciding, whether a given resident should be lifted by one NA or two or by a mechanical lift, nor were they shown how to transfer combative or contracted residents. While it takes only 5 to 15 minutes to learn how to use a Hoyer lift, some NA's said that they received training from supervisors on how to use the Hoyer lift whereas others testified that they learned from their co-workers or in one instance from a resident who explained to the staff how the lift operated. All who testified on the point, however, agreed that they were not given instruction as to the circumstances when they should use mechanical lifts.

According to some NA's, they were told that if a resident "looked" too heavy, they "felt" they could not do the lift, or they were not "comfortable" lifting a resident without assistance, they should request help, and some NA's denied even having been given this instruction.[15] As several NA's put it, whether to use the hug method or 2-person lift or mechanical lift is a matter of the NA's "judgement" or "decision." Although two Beverly

[15]As discussed more fully *infra*, a "team" lifting program was put into effect only sporadically and largely unsuccessfully at these facilities.

supervisors, Swank, Associate Administrator at Blue Ridge, and Patience Grummick, Director of Nursing at Monroeville, denied that NA's are responsible for making the "professional assessment" as to how each resident should be lifted, Beverly's managers did not dispute that Beverly failed to provide training on how much weight an NA could safely lift.

In 1990, the state of Pennsylvania began a nursing certification procedure as required by federal regulations effective that year. Beverly administered a training program sponsored and monitored by the Red Cross and approved by the Pennsylvania Department of Education which qualifies NA's for state certification as a nursing assistant and includes a hands-on test in which applicants for certification must demonstrate basic nursing skills. Although the state does not require NA's to qualify in lifting and transferring for certification, the Red Cross training includes positioning, turning, and moving residents; body mechanics; and safety measures. It further requires participants to practice and be evaluated on lifting after viewing instructor demonstrations, but it does not give instruction as to when any particular lift method should be used.[16] Beverly supervisory personnel qualified as instructors in this program.

Training was also given through the "Lift with Care" program, which Beverly acquired in 1987. "Lift with Care," which addresses prevention of back injuries through application of ergonomic principles, is a training system for health care workers produced by a company named "Visucom." It consists of an instructor guide, employee handouts, videotapes, and practice exercises covering six basic lifts or transfers: turning a resident, moving a resident up in bed, moving up in a chair, ambulation, transferring from bed to chair, and transferring from chair to bed. According to Blue Ridge Patient Care Coordinator Geraldine Adkins, Assistant to the Director of Staff Development at Blue Ridge at the time these cases arose, "Lift with Care" "explained the back and how back injuries could happen

[16]The Red Cross suspended its training program at Blue Ridge for at least a year due to concerns that the program was not being properly taught. It is unclear when this suspension occurred in relation to the inspection.

and the proper way that you should lift," including demonstrations of the correct use of both the Hoyer lift and ProFlex belt. The program is presented annually, and all NA's are required to attend each presentation, although several Carpenter Care NA's said that they were unfamiliar with the program.

"Lift with Care" was not developed by Beverly; it is generic in coverage. The only specific lifting techniques prescribed under the program are that two NA's should turn residents and move them up in bed or in a chair. Under "Lift with Care," other operations, such as moving a resident from bed to chair, may be performed by only one NA "if the patient is able to assist and is not too heavy," but the term "too heavy" is not defined, nor were NA's instructed as to what weights were safe to be lifted by one or two persons. "Lift with Care" also did not include any training with respect to combative residents. The program does not show how to use mechanical lifts because there are so many different types, nor does it describe when mechanical lifts should be used. Patty Benesh, Beverly's corporate safety manager and an instructor in the "Lift with Care" program, admitted that the program does not address when it is safe to perform a lift in any particular manner, and she reiterated that the appropriate method of lifting depends upon the particular NA doing the lifting. Benesh conceded that she never provided any specific guidance on when the decision should be made to use a Hoyer lift.

"Lift with Care" was presented as part of Beverly's "inservice" program. Inservices are periodic refresher training[17] on various nursing subjects given for approximately a half hour to an hour on all shifts by various Beverly personnel and outside speakers. "Lift with Care" is only one of a number of inservices dealing with resident lifting and transferring; other inservices were presented by each facility's physicians and occupational and physical

[17]Beverly also conducts an appropriate inservice if there has been an employee injury; for instance, after two NA's lost time from work after performing a lift in an improper manner, they were required to attend an inservice to review proper lifting techniques after they returned to work.

therapy staff.[18] All NA's are expected to attend except for one NA who should remain on duty to attend to any resident needs. Again, however, NA's stated that this training dealt with techniques but not guidance on use of particular lifting methods or factors to consider in selection of a lifting method. NA's felt that the demonstration and practice provided as part of inservices also did not realistically address combative or unresponsive residents.

Beverly's supervisors testified generally and consistently that they would customarily observe NA's as they were working and would correct any NA they observed using an improper lifting technique. Blue Ridge and Monroeville have a written progressive disciplinary program, and an improper lift could easily be detected either by the Charge Nurse or nursing supervisor who makes rounds every two hours. Richland Manor was in the process of implementing a disciplinary program which would focus particular attention on situations in which one NA performed a lift that was supposed to be done by two persons. In addition, the NA's providing on-the-job training would keep supervisors informed as to the progress of the new hires, and those who needed further instruction would be sent back to orientation or discharged if they did not show proper transferring and lifting performance. There is some evidence that NA's had received corrective instruction in proper lifting techniques or were reprimanded for failure to lift properly.

Resident Information Made Available to NA's

As indicated above, Beverly contends that the appropriate lifting or transferring method must be determined on a case-by-case basis for each resident individually. While there is no dispute in the record that Beverly made such evaluations which it recorded in the resident's records, NA's claimed that dissemination of specific information on how each resident was to be lifted was irregular and in some instances was incorrect.

Two documents, the Activity (or Activities) of Daily Living ("ADL") sheet and the Nursing Care Instruction Sheet, which are kept at the nursing station, are the prescribed

[18]Federal regulations require 12 inservices each year on specific subjects including occupational and physical therapy, but do not prescribe the content of inservices on lifting and transferring.

written means of communicating resident information to NA's. There is testimony by a number of NA's that prior to the inspection, these forms were often incomplete or inaccurate and that after the inspection they began to contain more information as to the resident's ability to bear weight. For instance, Blue Ridge instituted a program which had as its objective improvement of the "clarity" of the ADL's. Nevertheless, while the record in general shows that Beverly took measures to ensure that NA's and other responsible personnel were informed of the assistance requirements of each resident, there is some question as to the adequacy of those efforts.

Blue Ridge and Meyersdale supervisors stated that NA's have the opportunity to provide input to the ADL or instruction sheet and one Meyersdale NA, Tammy Crayton, said that she would make observations about a resident's ability to help with lifts. Three NA's at Monroeville, Lorelei Servocki, Bobbi Jo Fliflet, and Deborah Garritano, said that when they observed discrepancies in the ADL, they would notify the Charge Nurse.[19] NA's at Monroeville also were given a hand-lettered form which recorded the kind of assistance each resident needed in a variety of activities including transfers. The form was updated by the Charge Nurse on a weekly basis or when a new resident was admitted, and one employee, the unit clerk, would keep track of and record changes in resident assignments. This form was put into effect in early 1991, and an inservice was conducted for NA's regarding the new form. Monroeville Director of Nursing Grummick testified that she would periodically ask NA's if they had a copy of the form. Richland Manor NA's Connie Mohle and Mary Lou Krupka and Carpenter Care NA Mary Madill stated that NA's know the lifting and transferring requirements of the residents normally assigned to them. NA's working in the Medicare wing of Blue Ridge are told whether each new resident can be lifted with one person or whether a 2-person or mechanical lift is required.

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[19]Although Fliflet claimed she was never told which residents had to be lifted manually with two NA's and which ones she could lift alone, she admitted that her assignment sheet states how much help each resident needs to be moved. Garritano testified that the assignment sheet states whether a resident is to be lifted by one or two NA's.

Supervisors also stated that at the start of the shift the Charge Nurse would advise the NA's of any new residents and the level of assist of each new resident or of any changes in a resident's condition including residents who were sick or had appointments that would take them off the premises that day. If the resident's lifting and transfer assist requirements had changed, that information would also be communicated. Some NA's, however, claimed that the information they received from the Charge Nurse did not include guidance as to how to lift and transfer each resident, whereas other NA's, specifically several NA's at Carpenter Care, said they would get lifting information not from the Charge Nurses but from the NA's on the previous shift.[20] Meyersdale NA Crayton said that if a resident was moved to her floor, she would ask the NA's who had previously been assigned to that resident how the resident was to be lifted.

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[20]The physical and mental condition of each new resident is recorded upon admission on a Nursing History and Assessment form, which is kept as part of the resident's medical records. According to Jennifer Firestone, Admissions Coordinator at Monroeville, each NA assigned to a new resident would be informed of the information on the assessment form including the resident's degree of mobility and assistance required. Kathy Grube, Assistant Director of Nursing at Meyersdale, said that, on request, Charge Nurses or other supervisors will tell an NA what lifting or transferring information is shown in a resident's records. Otherwise, for privacy reasons, residents' medical records are not available to NA's. Pursuant to federal Medicare and Medicaid regulations effective in October 1990, Beverly began phasing out the Nursing History and Assessment Form in favor of the Minimum Data Set ("MDS"), a record of the medical history and condition including the functional skills and mobility of each new resident. The MDS includes an entry for the degree of assistance required and, if assistance is required, whether a 1- or 2-person lift method is to be used based on a recommendation from the Charge Nurse. The MDS is updated annually and whenever a significant change occurs in the resident's condition.

The MDS is the basis for the Resident Care Plan, a document which prescribes the goals and objectives for treatment of each resident and includes transfer information if the resident requires assistance. Although, under Beverly's own procedures, the Resident Care Plan should have been available to NA's, a number of NA's at Carpenter Care testified that they did not have access to the care plans. They also testified that it is for this reason that they generally had to use their own judgment as to the proper lift method for each resident.

Although Beverly attempts to assign an NA to the same residents each day, Beverly maintains a system under which assignments rotate on a periodic basis. In addition, it claims that pulling one NA off an assigned unit to fill in on another unit is unavoidable. According to Blue Ridge Patient Care Coordinator Terry Hilton, the Charge Nurse would instruct the substitute NA as to exactly what care each resident required, but there is some doubt in the record as to the extent to which this policy was actually effectuated.[21]

Injuries to NA's

A number of Beverly NA's testified regarding LBP or back strain they experienced while lifting or moving residents. In many instances NA's not only were unable for some period of time to perform their normal daily activities both at work and at home as a result of the LBP they suffered but were forced to take time off from work or were instructed to take a temporary absence from work in order to recover. Absences from work ranged from a few days to several weeks and in a few cases employees were out of work for six months to over a year. This testimony was corroborated by several different types of documentary evidence: workmen's compensation claim forms and related reports; OSHA 200 logs of occupational injuries and illnesses;[22] literally hundreds of "BE-122" forms, which are

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[21]Blue Ridge NA Lana Lang testified that when she was pulled off her regular assignment and directed to assist on another floor, the NA's on that floor would identify those residents who could or could not assist in lifting or transferring. Richland Manor NA Donna Beisel and Carpenter Care NA Donna Hollister said that they would not "get report[s]" when they were pulled to another unit. Beisel conceded that she was usually familiar with the residents where she was reassigned, but Hollister said she did not know the residents on other wings. Monroeville NA Myrna Jenkins also stated that she was not always given lifting instructions when she was assigned to a different unit. Meyersdale NA Crayton said that the report she would get if reassigned did not include specific instructions on how to lift the residents. On the other hand, Carpenter Care NA Mary Madill stated that NA's commonly exchange information about residents, and any NA who has a question about a resident can ask another NA.

[22]Section 29 C.F.R. § 1904.2(a) requires employers to enter each recordable injury or illness on the OSHA 200 form, the "Log and Summary of Occupational Injuries and Illnesses," or

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accident report forms Beverly's supervisors are required to file whenever an employee is injured; and reports showing the amounts paid out for workmen's compensation claims which also contain information as to what the claimant alleged was the basis of the claim. A review of these documents reveals a considerable number of complaints of LBP or lower back strain attributed to lifting or transferring residents.[23] Based on this evidence, the Secretary's compliance officers concluded that there were "numerous" injuries to NA's resulting from lifting, transferring, and moving residents resulting in lost work time. For example, CO John Morris concluded that in 1991 approximately one-third of the NA's at Monroeville (15 out of 45) had experienced a lost time injury from lifting or transferring residents. At Richland Manor, the OSHA 200 forms and Beverly's workmen's compensation records showed that 37 NA's had a total of five lost workday injuries resulting from lifting and transferring activities for the calendar year 1990 and ten such incidents during the first four months of 1991. At Meyersdale, Morris found 11 reportable lost workday injuries during the first six months of 1991, nine of these involved injuries to NA's from lifting or transferring. The previous year, five of nine lost workday injuries were in that category and seven out of ten for the year before that.

Beverly's corporate safety manager, Benesh, testified that "a vast number" of Beverly's workmen's compensation claims came from lifting and transferring residents and that Beverly had not contested the vast majority of such claims. James P. Zoesch, Beverly's Director of Loss Control and Benesh's superior, considered "back injuries," which incur greater costs than other types of claims, to be the most common type of claim at Beverly. While he agreed that they occurred mostly during lifting, transferring, and providing resident

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[22](...continued)
an equivalent.

[23]Examples include: back pain experienced while trying to pull a resident up in bed, "hurt back" trying to get a resident out of bed, and back pain experienced while lifting a resident from a lounge chair when the resident became combative and pulled the NA toward him (GX21 at BR0007568, BR0007576, and BR0007584).

care generally, he was of the opinion that aggressive behavior by residents was a significant factor. Similarly, Casimer Wieczorek, administrator at Monroeville, stated that most injuries in the nursing department are caused by a resident's unexpected or unanticipated movement. The "Lift with Care" manual states that 65 percent of Beverly's workmen's compensation claims, at a total cost to Beverly of $27.3 million, "are for some form of back injury."

DISCUSSION AND ANALYSIS

Definition of the Recognized Hazard

To establish a violation of section 5(a)(1) of the Act, the Secretary must prove that an activity or condition in the workplace presented a hazard, that the employer or its industry recognized this hazard, that the hazard was likely to cause death or "serious physical harm," and that a feasible and effective means of abatement existed by which the employer could eliminate or materially reduce the hazard. *Kokosing Constr. Co.*, 17 BNA OSHC 1869, 1872, 1995-97 CCH OSHD ¶ 31,207, p. 43,724 (No. 92-2596, 1996). As part of her burden to prove these elements, the Secretary must define the alleged recognized hazard in a manner that gives the employer fair notice of its obligations under the Act by specifying conditions or practices which are within the employer's control. *Inland Steel Co.*, 12 BNA OSHC 1968, 1970, 1986-87 CCH OSHD ¶ 27,647, p. 35,997 (No. 79-3286, 1986); *Pelron Corp.*, 12 BNA OSHC 1833, 1835, 1986-87 CCH OSHD ¶ 27,605, p. 35,871 (No. 82-388, 1986).

The Secretary's description of the recognized hazard in these cases evolved during the pretrial stages. While the pleadings referred to lifting of residents generally, in her opening statement at the hearing the Secretary asserted that the alleged hazard was *manual lifting of residents*. In fact, the record shows that Beverly understood that the alleged hazard was based on its specific lifting and transferring practices. Beverly's opening statement reads in part as follows:

> One cannot tell from the pleadings in this case or at least from the complaints exactly what is included in the phrase unsafe lifting and other strenuous operations and one, therefore, cannot tell exactly what it is that Beverly is to free its work place of. However, from discovery it appears that what is claimed to be hazardous conduct is Beverly's failure to adhere to a set of arbitrary rules that are unknown in the industry but are largely authored by the Government and its experts and those rules seem to be the following.
>
> Beverly did not avoid solo lifts of non-weight-bearing residents who weighed more than 50 pounds. Beverly did not avoid lifts by nursing assistants of non-weight-bearing residents weighing more than 100 pounds. Beverly did not avoid manual lifts by nursing assistants and others using what has been called the under arm grasp method about which you will hear more. Beverly did not

> avoid manually lifting residents from the floor even though I do not believe in this case you will hear about a single injury arising from that.

Furthermore, in her post-trial brief, the Secretary more specifically defined the hazard in terms of NA's being required to manually lift those residents who are unable to support their weight or otherwise assist in the lift and performing related activities such as turning and repositioning residents in beds and chairs.

It is well-settled that if the pleadings inadequately define the recognized hazard, the deficiency may be cured during the hearing. *Baroid Div. of N.L. Indus. v. OSHRC*, 660 F.2d 439, 449 (10th Cir. 1981) (deficiency in the definition of the recognized hazard resolved when the Secretary restated the definition at the hearing and questions posed by employer in examining witnesses indicated that it understood that the revised formulation of the recognized hazard was in issue); *National Realty & Constr. Co. v. OSHRC*, 489 F.2d 1257, 1265 (D.C. Cir. 1973) (ambiguity may be corrected if the correct formulation is litigated at the hearing with fair notice to the employer). The Commission may look to the issues as they are litigated and in particular the manner in which the employer presents its case to help determine whether the employer has had fair notice of the recognized hazard from which it has a duty to protect its employees. *E.g., Babcock & Wilcox Co. v. OSHRC*, 622 F.2d 1160, 1164 (3d Cir. 1980); *General Dynamics Land Sys. Div., Inc.*, 15 BNA OSHC 1275, 1280, 1991-93 CCH OSHD ¶ 29,467, p. 39,751 (No. 83-1293, 1991), *aff'd without published opinion*, 985 F.2d 560 (6th Cir. 1993). Notwithstanding any lack of clarity in the citation and complaint description of the recognized hazard, we find that Beverly plainly understood that the alleged recognized hazard was its work practices in terms of its unsafe lifting and transferring methods.

While Judge Frye did not find that the original allegation as pleaded or the Secretary's restatement of the alleged hazard in her brief were insufficient, he did conclude that the Secretary's description of the recognized hazard did not advise Beverly of its obligations or identify conditions or practices over which Beverly could exercise control because of the

nature of LBP itself. The judge reasoned that, unlike the usual hazard which arises from some force or action operating externally on the employee, here the hazard originates in the employee's own "physical exertion" and "is not in the true sense an injury, but rather a symptom" which is difficult to relate to any "specific precipitating event." We disagree. The judge's reasoning disregards the fact that the Act is directed to the conditions of employment which an employer furnishes to its employees in terms of their health and safety. While an employer may not be able to control how an individual employee reacts to a work environment, it clearly has control over that environment, and for purposes of the notice requirement of section 5(a)(1), the employer has sufficient notice of the obligation the Secretary seeks to impose so long as that duty is set forth in terms of working conditions or practices. *See, e.g., Duriron Co.*, 11 BNA OSHC 1405, 1406, 1983-84 CCH OSHD ¶ 26,527, p. 33,797 (No. 77-2847, 1983), *aff'd*, 750 F.2d 28 (6th Cir. 1984) (upholding the application of section 5(a)(1) to heat stress, an internal physiological response to a work environment that not only results from an individual employee's own energy expenditure, but also affects various individuals differently depending on their physical characteristics).[24]

Existence of the Hazard in Beverly's Facilities

The major portion of the judge's decision addresses the question of whether Beverly's lifting practices presented a hazard to its employees. The judge concluded that in order to

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[24]We also note that none of the parties argues that Beverly's ability to control employees' internal physiology is relevant to whether a description of the hazard in terms of lifting or transferring of residents fails to meet the criteria of section 5(a)(1). The Secretary contends that by basing his finding regarding hazard definition on the difficulty of relating LBP to a specific causative event, the judge was confusing the question of how the hazard should be defined with the issue of proof that conditions set forth in the definition actually presented a hazard to employees. We agree with the Secretary's contention that to properly define the recognized hazard, she does not have to specify the particular causative relationship between the hazard and the conditions in the employer's facility which might give rise to that hazard. *See Wiley Organics, Inc.*, 17 BNA OSHC 1587, 1592-93, 1995-97 CCH OSHD ¶ 31,035, p. 43,276 (No. 91-3275, 1996), *aff'd without published opinion*, 124 F.3d 201 (6th Cir. 1997) (adequacy of the employer's work practices to prevent the occurrence of the hazard is a separate issue from the question of how the recognized hazard is defined).

meet her burden to show that a hazard existed in the workplace, the Secretary must establish not merely that Beverly's lifting practices exposed its employees to the risk of harm, but that the risk of harm is "significant." The judge relied on the landmark decision by the Supreme Court in *Industrial Union Department, AFL-CIO v. American Petroleum Institute*, 448 U.S. 607 (1980), commonly known as the "*Benzene*" decision. In *Benzene*, the Court ruled that in order to promulgate a standard under 29 U.S.C. § 655(b)(5), section 6(b)(5) of the Act, the Secretary must determine that regulatory action is necessary to prevent a "significant risk of harm." The Commission has addressed the concept of significant risk in a few cases arising under section 5(a)(1). *E.g.*, *Pepperidge Farm*; *Waldon Healthcare Center*, 16 BNA OSHC 1052, 1993-95 CCH OSHD ¶ 30,021 (No. 89-2804, 1993) (consolidated); *Kastalon, Inc.*, 12 BNA OSHC 1928, 1986-87 CCH OSHD ¶ 27,643 (No. 79-3561, 1986) (consolidated). While none of these cases establishes the precise contours of a significant risk analysis under section 5(a)(1), we conclude that the evidence here clearly demonstrates that Beverly's lifting practices presented such a risk to its NA's.

1. Significant risk of harm

The *Benzene* decision arose under 29 U.S.C. § 655(f), section 6(f) of the Act, which provides for review of the validity of a standard promulgated under section 6 of the Act.[25]

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[25]Chairman Rogers believes that the *Benzene* "significant risk" test is inapplicable to these cases. Unlike the rulemaking context to which the "significant risk" test was applied in the *Benzene* case, and the Commission decisions applying that test to health hazards under section 5(a)(1), *Kastalon* (Secretary must establish that a significant risk of harm exists in the workplace in a case involving a suspect human carcinogen) and *Waldon* (same as to Hepatitis B virus, a bloodborne pathogen), the Beverly cases involve harm that has already occurred. These prospective harm cases are distinguishable from the ergonomics hazards present in *Pepperidge Farm* and here. In *Pepperidge Farm*, the Commission limited *Kastalon*, as the repetitive motion and lifting injuries had resulted in harm, and therefore there was no need to prove significant risk. The Commission noted, "[u]nder section 5(a)(1), the Secretary need only show that the alleged hazards at Downingtown were causing or likely to cause serious physical harm to employees there." *Id.* at 2013 n.50, 1995-97 CCH OSHD at p. 44,024 n.50.

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The Court was confronted with the Secretary's position that there is no safe level of exposure to a carcinogen and therefore under the language of section 6(b)(5)[26] the exposure limit must be set at the lowest technologically feasible limit that will not impair the financial viability of the affected industries. The precise question before the Court was whether the Secretary had stated an adequate basis for lowering the existing permissible exposure limit for benzene from 10 parts per million parts of air (ppm) to 1 ppm. In brief, the Court found the record of adverse effects of benzene at levels below 10 ppm to be inconclusive and that with respect to leukemia in particular, the record showed merely a hypothetical possibility that a reduced exposure level would prevent the incidence of leukemia. 448 U.S. at 634. While the Court conceded that the Secretary could legitimately promulgate a standard on this basis if the Act's purpose were "to eliminate completely and with absolute certainty any risk of serious harm," the Court specifically held that the Act was intended to require the elimination, to the extent feasible, of only "significant risks of harm." *Id.* at 641.

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[25](...continued)
The apposite line of cases on this issue includes *Kelly Springfield Tire Co. v. Donovan*, 729 F.2d 317 (5th Cir. 1984); *Titanium Metals Corp. v. Usery*, 579 F.2d 536, 541 (9th Cir. 1978); and *National Realty & Constr. Co. v. OSHRC*, 489 F.2d 1257, 1265 n.33 (D.C. Cir. 1973). "Extension of the significant risk standard to enforcements of the general duty clause would constitute an abandonment of the *National Realty* standard." *Kelly Springfield*, 729 F.2d at 323. The existence of a hazard is established if the hazardous incident can occur under other than a freakish or implausible concurrence of circumstances. *Waldon*, 16 BNA OSHC at 1060, 1993-95 CCH OSHD at p. 41,153 (citing *National Realty*, 489 F.2d at 1265 n.33). In the final analysis, regardless of whether the *Benzene* or the *National Realty* test is applied to the facts in Beverly, both tests are met, and I concur with Commissioner Weisberg in finding the existence of the alleged hazard here.

[26]That section provides as follows:

> The Secretary, in promulgating standards dealing with toxic materials or harmful physical agents under this subsection, shall set the standard which most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working life.

The *Benzene* decision dealt with the Secretary's authority to prescribe standards under section 6 of the Act, and there is no indication in the Court's decision as to the applicability of a "significant risk" analysis to recognized hazards alleged under section 5(a)(1). As Judge Frye noted, however, the Commission has applied a significant risk analysis to health hazards under section 5(a)(1). In *Waldon*, the Commission held that the Secretary had the burden to show a "significant risk" that nurses and NA's could contract the Hepatitis B virus through contact with the blood or other body fluids of nursing home residents. In *Kastalon*, where the employer was cited under section 5(a)(1) for exposing its employees to a carcinogen, the Commission held that the Secretary must prove that employees were exposed to a suspected carcinogen in an amount which presented a significant risk of harm.

Here, in concluding that the Secretary's evidence did not meet the "significant risk" standard, the judge questioned the Secretary's case on two fronts. From the fact portion of the case, the judge determined that there were "numerous" musculoskeletal injuries suffered by NA's while lifting and transferring residents which had resulted in "extensive" lost time and restricted work duty. However, the judge considered the evidence regarding injuries suffered by Beverly's employees as well as Beverly's lost workday injury ("LWDI") experience to be insufficient. The judge found that no medical expert testified "with reasonable medical certainty" that any injury reported by Beverly's NA's "was caused by their job tasks." The judge further stated that the greater LWDI rates for Beverly's NA's in comparison with the LWDI rates for Beverly's professional nursing staff do not prove the existence of a hazard but merely demonstrate "a basis for further investigation" in order to determine "the cause of the elevated rate of lost workday cases for nursing assistants." The judge also concluded that the bases for the opinion testimony of the Secretary's four primary expert witnesses were not adequate to show that lifting residents presents a significant risk of harm. At several points during his discussion of the expert opinion testimony and the scientific and research evidence in the record, the judge referred to the lack of proof that lifting is a "cause" of LBP, although he also referred to the "extent of association between lifting and back pain" and stated that "Beverly's position that LBP cannot be associated with

job factors may not be well taken."[27] The judge, however, misconstrued the *Benzene* decision to require a direct causal link between Beverly's lifting practices and LBP in order to establish that the lifting practices posed a "significant risk of harm."

In its *Benzene* decision the Court emphasized that there is no fixed degree of likelihood that the hazard will occur which must be shown in order for the risk to be "significant" and that the level of risk does not have to be established to the point of mathematical predictability. The Court observed that "the requirement that a 'significant' risk be identified is not a mathematical straitjacket" and that the Secretary's obligation was to "make a *rational judgment* about the *relative significance* of the risks associated with exposure to a particular carcinogen." 448 U.S. at 655, 656-57 (emphasis added). The Court offered the following illustration:

> If, for example, the odds are one in a billion that a person will die from cancer by taking a drink of chlorinated water, the risk clearly could not be considered significant. On the other hand, if the odds are one in a thousand that regular inhalation of gasoline vapors that are two percent benzene will be fatal, a reasonable person might well consider the risk significant and take appropriate steps to decrease or eliminate it. Although the Agency has no duty to calculate the exact probability of harm, it does have an obligation to find that a significant risk is present before it can characterize a place of employment as "unsafe."

Id. at 655. With respect to the nature of the evidence needed to support a finding of a "significant risk," the Court stated as follows:

> OSHA is not required to support its finding that a significant risk exists with anything approaching scientific certainty. . . . [The Act] specifically allows the Secretary to regulate on the basis of the "best available evidence." As several Courts of Appeals have held, this provision requires a reviewing court to give OSHA some leeway where its findings must be made on the frontiers of scientific knowledge. . . . Thus, so long as they are supported by a body of reputable scientific thought, the Agency is free to use conservative assumptions in interpreting the data . . . risking error on the side of overprotection rather than underprotection.

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[27]The judge's decision is unclear because the judge also states the scientific evidence "failed even to establish that lifting was associated with LBP."

Id. at 656 (citations omitted).

Under a significant risk analysis, the Secretary need not establish a direct causal relationship between the working conditions in question and the harm to be prevented. As the Seventh Circuit observed in its decision upholding the Secretary's bloodborne pathogens standard, 29 C.F.R. § 1910.1030,

> the idea behind requiring universal precautions for health care workers is to protect those workers in any situation in which there is a *nontrivial* risk of physical contact with a patient's blood . . . . OSHA was required neither to quantify the risk to workers' health nor to establish the existence of significant risk to a scientific certainty.

American Dental Assn. v. Martin, 984 F.2d 823, 827 (7th Cir.), *cert. denied*, 510 U.S. 859 (1993) (emphasis added). The reasoning of the Seventh Circuit is consistent with that of the Second Circuit, which has held that the "significant risk" criterion can be met by a showing of "realistic possibility." *Pratt & Whitney Aircraft v. Secretary of Labor*, 649 F.2d 96,104 (2d Cir. 1981). *See Pratt & Whitney Aircraft v. Donovan*, 715 F.2d 57, 63 (2d Cir. 1983) ("meaningful possibility" of injury). To the same effect are the holdings of other circuits that the determination of likelihood may legitimately be based on evidence that a work practice could result in harm "upon other than a freakish or utterly implausible concurrence of circumstances." *Titanium Metals Corp. v. Usery*, 579 F.2d 536, 541 (9th Cir. 1978); *National Realty*, 489 F.2d at 1265 n.33.

For the reasons that follow, we conclude that the evidence here clearly establishes the existence of a tangible and appreciable risk to Beverly's employees associated with its lifting practices.[28]

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[28]In response to his dissenting colleague, Commissioner Weisberg notes initially that Commissioner Visscher seeks to restrict and limit the Secretary's use of the general duty clause to those cases where the Secretary can demonstrate the existence of a hazard with scientific certainty. This would have the effect of raising the bar for the Secretary to establish "significant risk" in general duty clause cases to a higher level than that required in a standard-setting context.

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[28](...continued)
Commissioner Weisberg emphasizes that, in his view, the Secretary presented ample evidence that there is a substantive and definite risk that the NA's at these five Beverly facilities could suffer LBP from Beverly's manual lifting practices and that the level of this risk is sufficient to require that Beverly implement corrective measures under section 5(a)(1). The evidence includes the testimony of some thirty NA's at these Beverly facilities describing numerous instances of LBP experienced during lifting, transferring, and moving residents, workmen's compensation claim forms and related reports, OSHA 200 logs of occupational injuries and illnesses, and internal corporate accident reports. It is further corroborated by extensive scientific and expert evidence in the record including expert testimony that the lifts by Beverly NA's observed in these facilities exceeded the limits set forth in the NIOSH guidelines for safe lifting, biomechanical modeling, the Janesville study of NA's lifting and transferring residents in a nursing home in Janesville, Wisconsin, the Canadian research study of nursing personnel and back pain about which Dr. Jensen testified, and various other treatises and epidemiological studies that show a meaningful correlation between lifting and incidence of LBP.

In his dissent, Commissioner Visscher suggests that this significant risk of harm analysis is fatally deficient because it does not require the Secretary to prove that lifting patients is always hazardous or, if not, to establish the precise point at which lifting patients becomes harmful. In *Pepperidge Farm*, the company, relying on the "significant risk test" articulated by the Commission in *Kastalon,* argued, similarly to Commissioner Visscher, that the hazard at issue could not be regulated under the general duty clause because no one could testify as to when repetitive motion becomes a hazard or precisely how much the company should have reduced its employees' repetitive motion. 17 BNA OSHC at 2012, 1995-97 CCH OSHD at p.44,023. The Commission majority in *Pepperidge Farm* squarely rejected that contention stating:

> While knowledge of the threshold for injury may be essential in some cases, however, the Commission has never held that certainty as to the threshold level for injury is a prerequisite to regulation under the general duty clause.

Id. The Commission in *Pepperidge Farm* distinguished *Kastalon,* which involved *potential* harm from exposure to a suspected human carcinogen:

> The evidence of hazard in *Kastalon* was based on extrapolation from animal tests and concerned "potential" injury. In contrast this case stems from allegations of actual injury to humans. The inability to quantify a threshold

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> may be of greater significance when there is little evidence that the putative hazard may cause injury to humans, or where the question is whether it should be presumed that the risk should be controlled to the full extent feasible. It is of less significance where, as here, human injury is allegedly manifest. Thus, where human injury is actually occurring, neither precedent nor common sense require that the finding of hazard be foresworn until there is determination of the threshold at which there occurs a substantial risk of injury.

17 BNA OSHC at 2013, 1995-97 CCH OSHD at p. 44,024. Thus, under extant Commission precedent, the Secretary's inability in the instant case to identify the threshold level at which lifting and transferring patients causes harm to NA's does not preclude finding a violation of section 5(a)(1).

Commissioner Visscher argues that the Commission's holding in *Pepperidge Farm* only applies where "substantial injury is actually occurring" and that in the instant case there is no evidence that lifting and transferring of patients resulted in any particular incident of back pain. In Commissioner Weisberg's view, the record suggests otherwise. While the Commission does not have the benefit of medical evidence based on physical examination of the injured NA's, the documentary and testimonial evidence shows that the incidents of lower back pain often occurred suddenly and instantaneously during NA's lifting activities. The testimony by the NA's at the five cited Beverly facilities dramatically establishes that they experienced the onset of lower back pain as they were lifting and transferring patients. While some of these experiences appeared to involve resistance by a patient, the majority of these incidents did not. The OSHA 200 logs and the company accident reports documenting hundreds of back injuries show that the lower back pain occurred while the injured NA's were lifting and transferring patients. In addition, there was expert testimony that the lifting observed at these facilities exceeded the safety limits contained in the 1991 NIOSH lifting guidelines.

Commissioner Visscher points to the role of confounders and argues that these incidents of back pain may have resulted from other causes, such as pre-existing conditions, prior injuries, and other non-occupational factors. However, in *Pepperidge Farm* the Commission held that the record provided no clear basis for concluding that confounders were present in nearly sufficient degree to explain the high prevalence of injuries at the plant in question. Similarly, in the instant case the record does not provide a basis for finding that confounders explain the high rate of back injuries as well as lost workdays for NA's as compared to employees in other job classifications at the cited facilities.

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2. Incidence of LBP among Beverly NA's

As previously indicated, it is undisputed that there have been numerous complaints by Beverly NA's of LBP experienced during lifting and transferring operations. Beverly's LWDI was discussed by Dr. Roger C. Jensen, an industrial engineer specializing in ergonomics and safety engineering, who appeared for the Secretary as an expert witness in the field of injury data analysis particularly injuries among nursing personnel including NA's. Dr. Jensen computed LWDI rates based on his examination of Beverly's OSHA 200 forms and compared the LWDI rate for Beverly's NA's at each of the five facilities with the LWDI for other employee classifications. He also compared the LWDI for all employees at these facilities with the national LWDI for the nursing home industry[29] and with the LWDI

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[28](...continued)
Commissioner Visscher also notes that these incidents of lower back pain were not accompanied by physiological change or damage. However, for the reasons discussed herein and consistent with Commission precedent, the Commission majority finds that there can be "serious physical harm" even where there is no showing of pathoanatomical change or damage, and that lower back pain is a serious, chronic and debilitating condition that constitutes serious physical harm.

In short, the finding concerning the existence of a hazard to Beverly's NA's at these five facilities is based on the evidence in the record. Commissioner Visscher suggests that this decision takes the "significant" out of "significant risk." Do the hundreds of incidents of lower back pain experienced by NA's at these five facilities as they were lifting and transferring residents become insignificant because one cannot identify the precise point at which lifting becomes unsafe? Does the extensive scientific and expert evidence in the record, including epidemiological studies that show a meaningful correlation between lifting and incidence of lower back pain become insignificant because there is some disagreement among the experts? Commissioner Weisberg believes not.

[29]Dr. Jensen relied on average injury rates compiled by the Bureau of Labor Statistics for an occupational classification that consists approximately of 85 percent nursing homes and 15 percent personal care facilities. He testified that the percentage of personal care facilities, which provide a lesser level of care than nursing homes, would not be sufficient to materially
(continued...)

rate for all industry. He did not compare Beverly's LWDI rate for NA's with the national average for NA's because he did not have data for the national average. His results showed that the difference between the LWDI for NA's and for other employee groups averaged over three years (over 1990-91 for Monroeville and 1991-92 for Blue Ridge) ranged from 7.4 times greater at Richland Manor to 3.4 times greater at Monroeville, and the LWDI for four of the Beverly facilities exceeded the national average for nursing homes by as much as two to three times (he could not make this computation for Blue Ridge). He also observed that the national average for nursing homes was more than twice the average rate for all of general industry. He then gave his opinion that in addition to the fact that the nursing home industry has high injury rates as compared with general industry, NA's in particular are subject to the highest injury rates, and of these the most common kind of injuries are back and upper extremity injuries "associated with" lifting and transferring of residents. He based this opinion on injury studies by himself and others and stated that the conclusions reached in these studies were corroborated by Beverly's own LWDI rates.

However, whereas Dr. Jensen found LWDI rates to be substantially higher for NA's than other employee groups at these Beverly facilities and well in excess of the national LWDI rate for both nursing homes and general industry as a whole, Dr. Jensen noted that workmen's compensation data only identifies high risk groups and does not inform on the etiology (causation) of the injuries. In discussing the etiologic risk factors for incidence of LBP among nursing personnel, Judge Frye cited in particular one Canadian study in which approximately 5500 nurses in hospitals and one extended care facility were observed for a 12-month study period in an attempt to isolate the factors contributing to LBP. This study, with which Dr. Jensen was familiar and which he regarded as authoritative, was conducted to investigate the possibility that injury claims reports are not a reliable indicator of the risk factors for LBP:

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affect his comparison with the Beverly nursing home facilities.

> Although lifting is a likely risk factor, causation is far from confirmed from such data because one cannot infer, from injury data alone, that lifting occurred any more frequently in the injured nurses than in the uninjured nurses. Only an epidemiological study of a complete population of nurses can validly confirm "lifting" as a true determinant of risk. Furthermore, lifting needs to be examined using data derived independently of the compensation claim. These data would then be free from the inherent bias of compensation reports which reward work-related causation.

Penelope J. Venning et al., *Personal and Job-Related Factors as Determinants of Incidence of Back Injuries among Nursing Personnel*, 29 J. OCCUPATIONAL MED. 820, 820 (1987) (GX278). In summarizing Dr. Jensen's testimony, Judge Frye concluded that while NA's unquestionably have a higher LWDI rate than other employees performing nursing duties, "that fact alone . . . . provides no basis to suggest a conclusion that the lifting performed by the nursing assistants constitutes a significant hazard within the contemplation of section 5(a)(1) of the Act."

The judge reached a similar conclusion with respect to the Secretary's medical opinion testimony. The Secretary's expert medical witness, Dr. Gunnar Andersson, an orthopedic surgeon admitted as an expert in the diagnosis, etiology, and treatment of back pain, did not conduct his own medical examination of any Beverly employees but testified based on the diagnoses and statements in the existing medical records. Consequently, Dr. Andersson admitted, he was unable to take into consideration pre-existing conditions, prior injuries, chronic pain which persists even after the original causative factor has terminated, and non-occupational factors. Thus, he conceded that he was unable to testify with a medical certainty that the work activity in which each employee was engaged at the time the employee experienced pain was in fact the cause of the pain. As the judge noted, Dr. Andersson, in describing the conclusions he had reached, testified that he was "simply making a determination about whether or not the injury that they describe here could have been caused by the accident that was described here." Beverly's medical witness, Dr. John Frymoyer, also an orthopedic surgeon admitted as an expert in the etiology, diagnosis, treatment, and prevention of back pain, testified that the medical records of Beverly

employees which he reviewed did not contain sufficient information to allow him to reach an opinion as to causation, diagnosis, or a proper course of treatment and that in any event, a physician who is asked to diagnose or treat someone who complains of back pain cannot do so without personally performing a full medical examination including observations of the patient's response to various stimuli.

Judge Frye determined that this medical evidence did not establish a relationship between Beverly's lifting activities and the complaints of LBP by Beverly employees. He therefore held that this evidence did not show the existence of a hazard to Beverly's employees as alleged by the Secretary. While we agree with the judge that the evidence of Beverly's workmen's compensation claims and LWDI rates and the medical records of those employees who had reported claims of LBP do not alone necessarily establish that Beverly's lifting practices resulted in the LBP reported by its employees, we do not dismiss this evidence. Rather, we view the record in its totality, and we consider Beverly's workmen's compensation and LWDI rates and the reports of injury or LBP by its employees to be relevant to the question of the existence of a hazard when considered together with the scientific and expert evidence. We now turn to the discussion of that evidence.

3. Biomechanical modeling

The record in these cases contains extensive scientific and other technical evidence of research into the incidence of LBP among various occupational groups, including those engaged in nursing activities, as well as the methodology researchers use to attempt to predict the likelihood that specific groups of individuals will experience LBP based on their ability to lift various amounts of weight at various body postures and positions. Although there is general agreement that LBP results from compressive force placed on the L5/S1 disc,[30] the record shows that there is no known procedure by which either a researcher or a

[30]A disc is a fibrocartilaginous joint between two adjacent vertebra. The L5/S1 disc refers to the location between the lowest lumbar vertebra (L5) and the first sacral vertebra (S1). GRAY'S ANATOMY 100-113 (29th ed. 1973). According to the Secretary's expert witness on

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treating physician can actually measure the amount of force placed on the musculoskeletal system and in particular the spinal column as an individual performs a lift.[31] As a substitute, researchers have developed the concept of "psychophysical" testing, a research technique based on subjective responses of test subjects to various types and weights of lifts. The results of this testing are used to furnish data for "biomechanics," which is essentially a

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[30](...continued)
ergonomics, Dr. Arun Garg, it also is the area most widely studied for the purpose of job analysis because forces on the spine increase from top to bottom, and the L5/S1 disc is the lowest disc at which most disc surgeries are performed.

In studies it has conducted, the National Institute for Occupational Safety and Health (NIOSH) identified three forces working on the spine: compressive force, shear force, and torsional force. According to NIOSH, there is "uncertainty" regarding the effect of torsional and shear stresses on the lumbar area whereas compressive force has been "believed to be largely responsible for" injury to the vertebra. In its report of its findings, NIOSH states that "the high forces generated by low-back muscles are the primary source of compression forces on the lumbosacral disc," NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH, U.S. DEP'T OF HEALTH AND HUMAN SERVICES, WORK PRACTICES GUIDE FOR MANUAL LIFTING 27 (1981) [hereinafter *1981 NIOSH Lifting Equation*] (GX239). NIOSH therefore regards compressive force as "the critical stress vector" and in NIOSH's view, the L5/S1 location is the "site of the greatest lumbar stress during lifting." Thomas R. Waters et al., *Revised NIOSH equation for the design and evaluation of manual lifting tasks*, 36 ERGONOMICS 749, 753 (1993) [hereinafter *1991 NIOSH Lifting Equation*] (GX240). Judge Frye found that there was "wide" scientific support for the use of the L5/S1 disc as the location at which compressive force should be measured.

[31]The judge cited testimony by Beverly's expert, Dr. Frymoyer, that tests to actually measure the force within the spine ("*in vitro*" testing) have been conducted not on the L5/S1 disc but at lumbar vertebrae higher on the spine at the L3/L4 disc, which is very different in its configuration. The judge also noted that expert witnesses for both the Secretary and Beverly testified that the results of cadaver studies showing damage to discs do not necessarily correlate to LBP. In cadaver studies, researchers apply force to lumbar segments in order to measure the point at which the segments fail. The researchers who developed the 1991 NIOSH study stated that "[o]ne of the limitations of the vertebra compressive strength data is uncertainty as to whether compression injury to vertebra in cadaver studies is a reliable predictor of the risk of lifting-related low back pain, impairment, or disability." *1991 NIOSH Lifting Equation*, *supra* note 30, at 754.

computer model which simulates the degree of force imposed on the body from lifts of varying weight at different body postures. As discussed in more detail *infra*, psychophysical testing and the associated biomechanical modeling are accepted methodologies for measuring the effects of lifting and are relied upon by numerous researchers who have conducted epidemiological and other studies of risk factors for LBP.

In psychophysical testing, the test subjects perform various types of lifts, adding weight until they become uncomfortable or tired. The results are tabulated according to the percentages of male and female subjects capable of lifting a given weight without discomfort or pain. According to documents admitted into the record, Dr. Stover Snook, who developed this methodology for the Liberty Mutual Insurance Company ("Liberty Mutual"),[32] described the theory behind this research as follows:

> Strength and endurance vary greatly among individuals. Consequently, there is no one maximum weight that is acceptable to everyone. Simply stated, some people are stronger than others, and what is maximum for one is not maximum for another. In view of these individual differences, a good way to evaluate a manual task is in terms of the percentage of the population that can be expected to perform the task without overexertion or excessive fatigue. The higher the population percentage is for a given task, the lower is the risk of injury or illness—conversely, the lower the percentage, the higher the risk.

Stover H. Snook, *The Design of Manual Handling Tasks* (The Ergonomics Society Lecture 1978), 21 ERGONOMICS 963, 970 (1978) (GX237). As Dr. Snook and others stated in a further study, "if the manual handling task can be performed by most of the population without overexertion, it is less likely to be considered as the cause of a low back injury." Snook et al., *A Study of Three Preventive Approaches to Low Back Injury*, 20 J. OCCUPATIONAL MED. 478, 481 (1978) (GX238). Scientific articles by the Secretary's expert witness, Dr. Arun Garg, who has written extensively on the subject of strength testing, indicate that

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[32]The record shows that Liberty Mutual's maximum acceptable weight tables are generally accepted and relied on by other researchers. *E.g.*, Gary D. Herrin et al., *Prediction of Overexertion Injuries Using Biomechanical and Psychophysical Models*, 47(6) AM. IND. HYG. ASSOC. J. 322 (1986) (GX233).

while there is some disagreement among various researchers who have conducted psychophysical testing regarding where the maximum acceptable weight limit should be set, there is a general consensus as to the range of strength capabilities among the male and female population as well as the magnitude of the difference between male and female capabilities.

The lifting strength data compiled through psychophysical testing is used in conjunction with biomechanical modeling to ascertain the point at which the compressive force produced by a lift of an object of a certain weight and with a certain body posture will exceed the capabilities of a specific portion of the male or female population. Dr. Garg, an ergonomist specializing in occupational biomechanics, described the field of biomechanics as the application of principles of mechanics to the human body to determine the stresses and strains on various tissues of the body and the capability of the tissues to tolerate these forces. Essentially, biomechanical modeling applies principles of physics to determine the amount of compressive force represented by a lift or movement of an object of a certain weight at various positions in relation to the body.[33] When used in conjunction with the strength

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[33]Biomechanics takes into account the magnitude of a load and the distance from the body that the load is lifted. The product of the muscular effort needed to move the load and the distance from the body is known as a "moment." Because a muscle moves through a relatively small moment (distance or arc) the distance the muscle cells themselves contract is relatively small. The disparity between the relatively short arc of muscle movement and the complete swing of the attached limb results in high forces being placed on the muscle and joint. *1981 NIOSH Lifting Equation*, *supra* note 30, at 23. NIOSH explained the relationship between the load and the compressive force as follows:

> [W]hen a 20-kg [44-pound] load is held at arm's length, it produces a large torque at the lumbosacral joint . . . . This, in combination with the torso weight, produces a compression force at the L_5/S_1 disc equivalent to what holding about a 40-kg [88-pound] load between the knees would produce. In other words, one does not have to "bend over" to produce high forces on the low-back structures. A person with strong arms and shoulders, in particular, can position the body in postures that greatly multiply an external load's effect on the low back.

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capability data compiled by Dr. Snook and other researchers, biomechanical modeling can estimate the percentage of the male and female population that would be able to perform a specified type of lift without pain or discomfort or, more specifically, what percentage of each population has the strength to support the load on each joint of the body involved in making the lift. Research conducted by Dr. Garg notes that individuals tend to underestimate their actual physiological lifting capability by about 20 percent. Arun Garg et al., *A comparison of isometric strength and dynamic lifting capacity*, 23 ERGONOMICS 13, 23 (1980) (GX218). Accordingly, "acceptable weight limits based on . . . biomechanical modeling, in general, are higher than those based on psychophysical methodology," but otherwise the biomechanical and psychophysical methodologies yield generally consistent results. Arun Garg & M.M. Ayoub, *What Criteria Exist for Determining How Much Load Can Be Lifted Safely?*, 22(4) HUMAN FACTORS 475, 479 (1980) (GX219). In summarizing other research, Garg reached two conclusions: first, "the heavier the weight of the load lifted, the greater the frequency and severity of low back and other musculoskeletal injuries" and second, "anthropometric measures such as gender, age, body weight, height, etc., in general, are not good predictors of strength." *Id.* Dr. Andersson testified that biomechanical modeling is an accepted scientific technique and is generally considered a valid methodology for calculating internal forces on the spinal column. The judge credited Dr. Andersson's testimony, and none of Beverly's expert witnesses gave a contrary opinion as to the recognition of biomechanical modeling in the scientific community.

4. NIOSH lifting equations

The record in these cases includes two documents describing criteria for evaluating lifting tasks issued by the National Institute for Occupational Safety and Health ("NIOSH"). The first of these documents is the initial NIOSH "Work Practices Guide for Manual Lifting" issued in 1981, which sets forth a formula, known as the NIOSH lifting equation, for

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[33](...continued)
Id. at 27.

determining a safe level of lift. *1981 NIOSH Lifting Equation*, *supra* note 30. The second document is a research paper written by Dr. Garg and others discussing revisions to the NIOSH lifting formula that were made in 1991 by a committee of which Dr. Garg was a member.[34] *1991 NIOSH Lifting Equation*, *supra* note 30. The NIOSH equations rely on the data compiled by various researchers on the biomechanical, epidemiological, psychophysical and physiological bases for lower back pain and provide a means of analyzing lifting and loading jobs for their level of risk. The 1981 NIOSH equation recommended an action limit ("AL") and a maximum permissible limit ("MPL") of three times the AL. As the researchers who wrote the document explaining the subsequent NIOSH equation stated, loads below the AL were considered to present little risk for most workers; between the AL and MPL there would be an increased risk for some but not all workers, and lifting above the maximum constituted a "significant risk" of LBP for most workers. *1991 NIOSH Lifting Equation*, *supra* note 30, at 767. In terms of force measurements, compression forces on the L5/S1 disc above 1430 pounds were considered to be intolerable in most workers, with only 25 percent of men and 1 percent of women capable of performing work at that level. Accordingly, 1430 pounds compressive force was set as the MPL. *1981 NIOSH Lifting Equation*, *supra* note 30, at 124, 126. The AL was set at a compressive force of 770 pounds, the point at which over 75 percent of women and 99 percent of men could lift the load. *Id.* at 125.

The reason for the 1991 revision was to enable the equation to cover a larger range of duration and frequency of lifting as well as asymmetrical lifting where the load is not distributed evenly on either side of the body.*1991 NIOSH Lifting Equation, supra* note 30, at 749. Like the previous equation, the 1991 version uses a formula with multipliers for horizontal, vertical, and lift distance and for frequency—in addition to a factor to account for asymmetrical lifts—but substituted a single lifting index ("LI") for the earlier three-part

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[34]Other members of this committee included Drs. Don B. Chaffin and M.M. Ayoub, who wrote other scientific papers on lifting that were admitted into the record. The analysis of the 1991 NIOSH lifting equation was also reviewed by Dr. Snook and by Dr. Andersson, the Secretary's expert witness here. *1991 NIOSH Lifting Equation*, *supra* note 30, at 770.

formula. The LI is the ratio of the load lifted to the "recommended weight limit" of 3400 newtons. *Id.* at 767, 755, 774.[35]

Because the NIOSH lifting equation is based on the generally accepted means of analyzing LBP and its risk factors, NIOSH's statements regarding its formula warrant close attention. The judge quoted the following discussion in the 1991 NIOSH document which the judge interpreted to mean that the LI does not reflect the *level of risk* of LBP:

> The [LI] provides a simple method for comparing the lifting demands associated with different lifting tasks in which the load weights vary and the recommended weight limits vary. In theory, the . . . LI may be used as a gauge to estimate the percentage of the workforce that is likely to be at risk for developing lifting-related low back pain. . . . [H]owever . . . it is not possible to quantify the precise degree of risk associated with increments in the [LI]. In a similar manner, there is uncertainty about whether [an LI] of one is a reliable boundary for differentiating between an increase in risk and no increase in risk for some fraction of the working population.

1991 NIOSH Lifting Equation, *supra* note 30, at 767. The passage goes on to refer to the "assumptions and uncertainties in the scientific studies and the theoretical models which have related lifting to low back injuries" and states that "these uncertainties do not all point in the same direction. Some support the belief that [an LI] of one will place a substantial fraction of the work force at an increased risk of [LBP]. Others support the belief that most of the work force can work safely above [an LI] of one." *Id.*

While NIOSH recognized the difficulty of *quantifying* the degree of risk associated with measurements of the lifting index, NIOSH nevertheless found sufficient evidence to indicate that the lifting criteria can reliably predict the risk of LBP. NIOSH specifically stated that it had selected 3400 newtons "as the compressive force that defines an increased risk of back injury." *Id.* at 753. The authors of the article describing the 1991 NIOSH lifting equation summarized the general philosophy behind its LI as follows:

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[35]According to its dictionary definition, a "newton" is the force required to accelerate one kilogram at the rate of one meter per second per second. Dr. Garg testified that 3400 newtons is equivalent to the AL of the 1981 equation.

> A main tenet of our approach, however, is that the multiplicative nature of the equation has provided a final equation that is more likely to protect healthy workers than each individual criterion. Specifically, when several factors deviate from the ideal (i.e., standard lift location), the decline in the predicted value obtained from a multiplicative model for most lifts depends upon the product of several factors; this substantially reduces the [recommended weight limit]. . . .

Id. at 768. While acknowledging a difference of opinion among its committee members as to whether "worker selection criteria . . . can accurately identify workers who can perform lifting tasks with an [LI greater than 1] without an increased risk of a work-related injury," the authors nevertheless emphasized that most of the committee members, including Drs. Chaffin and Andersson, agreed that "many" workers "will be at elevated risk if the lifting index exceeds 3.0." Furthermore, the authors concluded that

> Despite the limitations of the research studies and inherent uncertainties in relying on expert judgment, it is likely that lifting tasks with a lifting index [greater than] 1 pose an increased risk for lifting-related low back pain for some fraction of the workforce. Therefore, the lifting index may be used to identify potentially hazardous lifting jobs or to compare the relative severity of two jobs for the purpose of evaluating and redesigning them.

Id. In addition, they reiterated that researchers Chaffin, Kyung S. Park, Snook, and Herrin, *see supra* note 32, had concluded that "the risk of lifting-related low back pain increases as the demands of the lifting task increase." *Id.* at 767. Indeed, the authors of the article noted that NIOSH's own view, "independent of the 1991 committee," "is that a maximum compressive force of 3 4kN [equivalent to a LI of 1] on the L5/S1 vertebrae may not protect the entire workforce [because] data from some of the workplace studies suggests that even in survivor workplace populations, jobs with compressive forces below 3 4kN were associated with an increase in the risk of back injuries." *Id.* at 755.

For its part, Beverly claims there is no basis on which to connect the NIOSH lifting equation with conditions in the health care industry. In writing regarding the 1981 version of the NIOSH lifting equation, Dr. Jensen and three other researchers reflected the same concerns:

> None of the studies used to develop the Guide were conducted in the health care industry. Additionally, the literature reflects few attempts to apply the Guide to patient lifting in hospitals . . . because the Guide only applies to sagittal plane lifting [parallel to the body; *i.e.*, no twisting] in which the lifter can get a secure grip on the load – conditions that are not generally met in patient lifting situations. While the Guide is predicated on a belief that manual lifting of heavy loads is a major risk factor for back injury, it cites no evidence linking patient handling/lifting to risk of back injury among nursing personnel.

Terrence J. Stobbe et al., *Incidence of Low Back Injuries Among Nursing Personnel as a Function of Patient Lifting Frequency*, 19 J. SAFETY RES. 21, 22 (1988) (GX276). Nonetheless, the 1991 revisions to the lifting equation take account of conditions which are more reflective of the nursing industry. Thus, the equation was expanded to include twisting and asymmetrical loads[36] as well as loads "with less than optimal hand-container couplings." *1991 NIOSH Lifting Equation*, *supra* note 30, at 749. We also note that Stobbe, *supra*, cited one study which specifically applied the NIOSH criteria to patient lifting activities at a government hospital which included a 60-bed care facility. That study concluded that despite the fact that NA's performed lifting in the manner in which they had been instructed, both the AL and MPL were exceeded, "indicating that the tasks posed from a moderate to a significant risk for injury." J. Torma-Krajewski, *Analysis of Injury Data and Job Tasks at a Medical Center*, *in* TRENDS IN ERGONOMICS/HUMAN FACTORS IV (S.S. Asfour ed., 1987) 863, 873 (GX-256).

As part of her case here, the Secretary applied the NIOSH lifting equation and its biomechanical basis specifically to the work activities performed by Beverly's NA's. Dr.

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[36]In one of the lifts Dr. Owen observed at Blue Ridge, two NA's lifted a resident out of a geri-chair by pulling on a sheet that was under the resident. She considered this lift particularly hazardous because of the bending and flexing actions of the NA's. Beverly's NA's offered descriptions of their work activities which illustrate the degree of bending and twisting required: "[Y]ou are leaning over the bed, straining . . . your arm, your back, your neck and your shoulder and you are bearing all of their weight, you are picking them up off the bed," "you are stretching and you are reaching to put this resident in this chair and you are pivoting at the same time," and "dead weight . . . you could feel it pulling in your shoulders and your back."

Garg studied the videotapes taken by the Secretary's compliance officers and performed a biomechanical analysis of the body posture and movement of the limbs of the NA's as they performed their tasks. Using a biomechanical model of body posture data for all relevant joint angles, including the position and movement of the elbow, shoulder, trunk, knees, and ankle, Dr. Garg determined that the compressive force experienced when lifting just a 100-pound resident came only marginally within the NIOSH recommended limit of 770 pounds. Beverly's NA's using the 2-person under the axilla lift method would experience a compressive force on the L5/S1 disc of 740 pounds when lifting a resident weighing 100 pounds, 830 pounds when lifting a resident weighing 125 pounds, 923 pounds with a resident weighing 150 pounds, and 1096 pounds with a resident weighing 200 pounds. The percentage of the female population having sufficient strength in the torso area to perform these lifts was respectively 71 percent, 59 percent, 45 percent, and 21 percent. Dr. Garg conducted a similar analysis of the single person "hug" lift method and determined that it exposed Beverly's NA's to even greater compressive forces than the 2-person lift method.

5. Epidemiological studies

As previously indicated, the NIOSH lifting equations rely in part on epidemiological studies of the effects of lifting. The record includes numerous studies of varying significance and relevance to the particular working conditions at issue here. A number of the studies and much of the expert testimony regarding them is cumulative and repetitive and has marginal value in deciding the issue of whether lifting practices such as those existing in Beverly's facilities expose NA's to the hazard of LBP. We will address only those relevant studies on which the judge and the parties rely.[37] *See Pepperidge Farm*, 17 BNA OSHC at 2023, 2025-

[37]Epidemiology is a branch of medical research which studies the distribution and causes of disease by studying its patterns in populations. Associations between suspected causes and effects may be made by comparing incidence of disease of exposed to unexposed populations or the incidence of exposure of sick to healthy populations. *Smith v. Ortho Pharmaceutical Corp.*, 770 F. Supp. 1561, 1573 (N.D. Ga. 1991). The headnote to a publication by Dr. Andersson, Gunnar B.J. Andersson, *Epidemiologic Aspects on Low-Back Pain in Industry*,

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26, 1995-97 CCH OSHD at pp. 44,034-35, 44,037-38 (Commission limits discussion to the most significant expert evidence).

In discussing the various epidemiologic studies admitted into the record,[38] the judge distinguished between retrospective and prospective studies.[39] While we agree with the judge that retrospective studies are generally considered less informative on the issue of causation than are prospective studies, *id.* at 2022 n.76, 1995-97 CCH OSHD at p. 44,034 n.76, we find that the epidemiologic studies in this record, particularly the prospective studies, establish a sufficient degree of association between lifting and LBP in NA's to support the conclusion that Beverly's lifting practices are hazardous. Indeed, we note that Dr. Frymoyer, in describing the conclusions of a retrospective analysis of the incidence of LBP in a study population of 3920 men and women, identified "jobs requiring repetitive heavy lifting" as

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[37](...continued)
6 SPINE 53, 53 (GX345), states that "[t]he role of epidemiology . . . is to clarify the natural history and clinical course of the pain and to identify workplace factors and individual factors of importance."

[38]The Commission has recognized that epidemiological research can be of probative value in the ergonomics context. *Pepperidge Farm*, 17 BNA OSHC at 2022 & n.78, 1995-97 CCH OSHD at p. 44,034 & n.78.

[39]A retrospective study attempts to locate similarities among individuals who have experienced a common symptom, such as LBP. Conversely, a prospective study, instead of looking for factors based on prior incidence of LBP, follows a patient group for a long period of time in order to correlate any changes in the patient's condition with any known risk factors. In a prospective study, researchers know beforehand what conditions the subjects are exposed to but commence the study *before* the onset of symptoms; hence, the designation "prospective." In retrospective case control studies, researchers go back to determine what conditions subjects have been exposed to after the subjects develop the illness being investigated. In both types of studies, researchers use standard statistical methods to determine whether any difference observed in the two populations or groups is statistically significant, *i.e.*, did not result solely from chance. *Ortho Pharmaceutical Corp.*, 770 F. Supp at 1574.

a risk factor "associated with severe low-back pain." Frymoyer, *supra*, at 213.[40] Dr. Andersson stated his opinion that "epidemiologic evidence links the onset of back pain to lifting events with fairly strong evidence," and he described a number of epidemiological studies which in his view supported this conclusion.

One of the more significant prospective epidemiological studies[41] directed specifically to NA's performing nursing tasks was the Janesville study conducted by Drs. Owen and Garg in a nursing home in Janesville, Wisconsin under a NIOSH contract. The purpose of the project was to use epidemiologic research techniques to determine whether using walking belts[42] and mechanical hoist devices rather than manual lifting of residents would be effective in reducing the forces imposed on the spine and the incidence of injury to NA's. The researchers studied 57 NA's as they lifted and transferred residents weighing between 38 kilograms (84 pounds) and 120 kilograms (264 pounds). Employing a biomechanical model, the researchers determined that the 2-person under the axilla lift, the manual lift method primarily used at that facility, produced a compressive force on the L5/S1 disc ranging from 3693 to 5414 newtons, with a median value of 4751 newtons, a level within the strength capability of only 41 percent of the female population. In his testimony describing these results, Dr. Garg concluded that the 2-person manual lift exceeded the "acceptable level of compressive force," which in Dr. Garg's view is 3400 newtons, the same value prescribed in the NIOSH lifting equation. Conversely, after "intervention," that is, after the implementation of mechanical hoists and lifting and transfer assisted by belts,

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[40]The judge stated at one point in his decision that the epidemiological evidence "failed to even establish that lifting was associated with LBP." We reject this conclusion as contrary to the preponderance of the scientific evidence.

[41]Judge Frye stated that this was a biomechanical and psychophysical, not an epidemiological study, but the articles published by Drs. Garg and Owen make clear that the intervention portion of the project was a prospective epidemiologic study.

[42]A "walking belt" is a wide strap with handles that NA's can use to assist in moving or lifting a resident.

the compressive force ranged from 1517 to 2413 newtons, with a median of 1964 newtons, a level within the capability of 83 percent of the female population. Subjectively, the mean rating of perceived exertion was between "somewhat hard" and "hard" before intervention and less than "very light" after intervention. A. Garg & B. Owen, *Reducing back stress to nursing personnel: an ergonomic intervention in a nursing home*, 35 ERGONOMICS 1353, 1356, 1366 (table 10), 1372 (1992) (GX199).

As Judge Frye noted, the most accurate and reliable type of epidemiologic study is a "prospective cohort," that is, a study which identifies a specific population at one point in time and then follows that population for a successive period of time. In such a study, populations are selected based on their prior exposure to the suspected causative agent (one population known to be exposed and the other known not to be exposed); the incidence of the medical condition in each population is then compared. *Lynch v. Merrell-National Laboratories*, 646 F. Supp 856, 863 (D. Mass. 1986), *aff'd*, 830 F.2d 1190 (1st Cir. 1987); *Ortho Pharmaceutical Corp.*, 770 F. Supp at 1574. *See Pepperidge Farm*, 17 BNA OSHC at 2020 & n.76, 1995-97 CCH OSHD at p. 44,034 & n.76 ("ideal test" of causality consists of large-scale prospective cohort studies with well-defined measures of exposure and health effect). One such study is the Canadian research project about which Dr. Jensen testified. In this study, characteristics of nursing personnel who did not report injury (back pain) were compared with characteristics of those who did. The most significant predictor was type of work area, with extended care, chronic care, and orthopedics being the most likely for back injuries. The second strongest predictor was frequency and weight of resident lifted, then occupational classification (NA's being more likely to have reported an injury), followed by injury history (those having a prior injury were more likely to report a second one). Venning, *supra*.

As the judge notes, this study identifies several risk factors but states that no specific causative relationship can be identified. On the other hand, the study does establish a clear relationship between lifting and LBP. Although Beverly contends, and the judge agreed, that it "sets forth no conclusion as to the relative role of lifting in the risk of back pain among

nursing personnel," the concluding paragraph of the study states that "major risk factors have been evaluated and defined by adjusted odds ratios" and "given the distribution of these factors in a sample population, some sense of the relative risk of back injury for that group can be assessed." *Id.* at 825. In other words, while a number of factors contribute to the likelihood of LBP among nursing personnel, these factors can be assigned a relative degree of risk. The study calculates the odds ratio for frequency of lifting at 4.26 for areas where lifting occurred most often and 2.19 where lifting is performed on a daily basis, 1.77 for NA's as compared with RN's and supervisors, and 1.73 where the operative factor is a history of prior back injury. *Id*. at 823.[43]

Other studies, while not as persuasive, corroborate the conclusion that lifting is a known and recognized risk factor for LBP and there is a meaningful correlation between lifting and the incidence of LBP.[44] For instance, Dr. Andersson participated in a retrospective

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[43]Odds ratios are not calculated by comparing one criterion directly with another. Rather, each suspected factor is compared with the absence of that factor. For example, the odds ratio of 4.26 for lifting frequency is determined by comparing areas where lifting occurs most often with those areas where it occurs least; when lifting is defined as daily lifting, the comparison is between areas where daily lifting occurs and areas where lifting is not performed on a daily basis. *Id.* The relative degrees of risk are also stated in relation to the factor having the lowest degree of risk: "Within the model of logistic regression, significant factors were examined as subsets to account for the influence of other major factors. The referent group in each case is the subgroup with the lowest relative risk." *Id*. at 824, Table 3 (note). Essentially the same description of risk ratios has been used in federal case law. *See In re Joint Eastern & Southern Dist. Asbestos Lit.*, 827 F. Supp. 1014, 1027 (S.D.N.Y. 1993) (quoting (emphasis added) *Manko v. United States*, 636 F. Supp. 1419, 1434 (W.D. Mo. 1986), *aff'd in part and rev'd in part*, 830 F.2d 831 (8th Cir. 1987)).

[44]Beverly heavily relies on a prospective epidemiological study conducted by its expert, Dr. Stanley Bigos, of a large worker population at Boeing Company. Dr. Bigos testified that even that study "is not sufficient to allow us to institute a particular approach for preventing back problems." However, the purpose of that study was to explore the factors involved in worker reporting of back pain and not risk factors for actual onset of the pain. We therefore conclude that the Boeing study is not sufficient to outweigh the conclusions we draw from the overwhelming weight of the other scientific evidence of record including the NIOSH lifting

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cross-sectional study in Sweden of a random sample of 1746 women ages 38 to 64 based on questionnaires regarding LBP. Using standard statistical measures for determining correlations between variables, the study determined that in the group up to 49 years old the only factors to have a "direct relationship" to LBP were worry, tension and the end of the work day, and for those ages 50 and above, only fatigue was directly related. Nevertheless, "significant" correlations were found between LBP and bending and frequency of lifting. Hans-Olaf Svensson & Gunnar B.J. Andersson, *The Relationship of Low-Back Pain, Work History, Work Environment, and Stress*, 14 SPINE 517, 519 (1989) (RX229). Studies on which Dr. Andersson based his opinion of a relationship between lifting and LBP include a study of various occupational groups in Israel. Like the Venning study on which Dr. Jensen relied, Dr. Andersson described this as a "well-recognized" peer-reviewed study cited in other articles. *See Kumho Tire Co. v, Carmichael*, 526 U.S. 137, 149 (1999) (peer review and publication as factors in determining the reliability and accuracy of scientific evidence). According to the study's author, it validates "the importance of the occupational physical demands in the appearance of LBP." The study specifically grouped both nurses and "heavy industry" workers as having "physically demanding occupations" in which a "proneness to LBP . . . is most prominent." Alexander Magora, *Investigation of the Relation Between Low Back Pain and Occupation*, 39 INDUS. MED. 28, 33 (1970) (GX343). Dr. Andersson also cited an article by Chaffin and Park describing a study of the relationship between physical stress on the job and incidence of low back pain or low back injuries in which the authors concluded that LBP correlates with location and weight of the load lifted.[45] Don B. Chaffin,

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[44](...continued)
equations.

[45]Beverly correctly points out that NIOSH "explicitly identified the limitations of this study," quoting the following: "[the] study cannot be used to determine the difference in injury incidence rates for jobs with compressive forces above and below 3 4kN." *1991 NIOSH Lifting Equation*, *supra* note 30, at 755. However, Beverly omits a qualification set forth in the NIOSH document; NIOSH indicated that this study found a correlation at other force
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Ph.D. & Kyung S. Park, *A Longitudinal Study of Low-Back Pain as Associated with Occupational Weight Lifting Factors*, 34 AM. IND. HYG. ASSOC. J. 513, 523 (GX263). Dr. Andersson's own publication reviewing the literature on back pain in industry describes the association between lifting and back pain. According to this publication, it is "clearly established that back pain can be triggered by lifting, but the frequency of lifting circumstances varies from 15% to 64% in these studies." Dr. Andersson's article also notes that "a high prevalence of back disorders is usually found in jobs involving very frequent heavy lifting. . . . in particular lifting in combination with lateral bending and twisting." Andersson, *supra* note 37, at 55.

Additional studies which the Secretary cited to the judge include a study of the prevalence of LBP in nurses in comparison to teachers as the control group. Although the judge asserted that this study does "not focus on lifting," its authors state that "the commonest event precipitating an attack of LBP in nurses was lifting patients." George Cust et al., *The Prevalence of Lower Back Pain in Nurses*, 19 INT'L NURSING REV. 169, 175 (1972) (GX203). The study concludes:

> There was little difference between nurses and teachers in the overall prevalence of LBP. When the attack of LBP was related to its precipitating factor, either at work or outside work, then considerable differences were unmasked between the two groups. LBP came early and was largely precipitated by factors arising at work in nurses, whereas in teachers, the incidence of LBP increased with time and the contribution of LBP of non-occupational origin was greater.

Id. at 177. In another study, the prevalence of both sciatica (pain in the hips and thighs) and LBP in NA's was compared with that of other nursing staff, although the judge dismissed this study as only dealing with the incidence of sciatica. NA's were found to have a clearly higher prevalence of LBP, and the authors of the study recommended "reduction of the

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[45](...continued)
levels: "the LBP incidence for repetitive lifting tasks was less than 5% when the predicted compressive force on the L5/S1 joint was below 2 5Kn, and . . . the incidence rate increased to more than 10% when the predicted compressive force exceeded 4 5kN." *Id.*

physical work-load arising from patient-handling." T. Videman et al., *Low-Back Pain in Nurses and Some Loading Factors of Work*, 9 SPINE 400, 403-04 (1984) (GX204). Dr. Owen testified that both of these studies have been subject to peer review and have been cited elsewhere, and she considered them reliable.[46]

Similarly, in summarizing other research studies, Dr. Garg concluded that "nursing personnel show a relatively high prevalence of low-back pain. . . . The problem appears much more severe in nursing homes than in hospitals . . . . Researchers have concluded that most of the occupationally related low-back pain in nursing personnel is the result of, or is precipitated by, frequent manual lifting of patients." A. Garg et al., *A biomechanical and ergonomic evaluation of patient transferring tasks: bed to wheelchair and wheelchair to bed*, 34 ERGONOMICS 289, 290 (1991) (GX194) The studies Garg cited included Cust, *supra*, and Videman, *supra*, as well as a study of the incidence of back pain among 550 nurses in a large urban hospital in California, Philip Harber et al., *Occupational Low-Back Pain in Hospital Nurses*, 27 J. OCCUPATIONAL MED. 518 (GX-279). The latter concluded that "there is a high frequency of significant occupational low-back pain in hospital nursing staff." In comparison to the control group, consisting of hospital personnel who perform mostly clerical tasks, over a 6-month period 52 percent of the nursing staff but only 20 percent of the clerical staff reported at least one instance of LBP. *Id.* at 522.

The judge placed heavy reliance on a chapter of a book by Dr. Andersson and other researchers addressing specific occupational factors in occurrence and prevention of back

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[46]For example, a Canadian study of the forces placed on the L5/S1 disc cited both the Videman study, *supra*, and Andersson, *supra* note 37, in concluding that "back problems are more frequently encountered in work operations involving the handling of heavy loads, prolonged static postures, accidental overloads and the combination of bending and twisting" and that "nursing aides are particularly liable to low-back injuries and the heaviness of the work is related to the incidence of low-back pain . . . .The risks for this type of injury in nursing aides appear to be associated with the handling of patients . . . ." M. Gagnon et al., *Evaluation of forces on the lumbo-sacral joint and assessment of work and energy transfers in nursing aides lifting patients*, 29 ERGONOMICS 407, 407 (1986) (GX252).

injuries and reviewing some of the literature on the factors of lifting, posture, and vibration. He referred to the following statements from this publication from which he concluded that while there may be an *association* between lifting and disability, lifting is not necessarily a factor which increases the risk of LBP:

> It is difficult to determine the relationship between occupational factors and low back pain because (1) low back pain is not easily defined, (2) sickness absence data are influenced not only by pain but also by physical and psychologic work forces, social factors, and the insurance system, (3) the healthy worker effect may bias data, (4) exposure is difficult to determine, and (5) there is poor relationship between tissue injury and disability. Most studies are case-control studies and, as such, do not prove causality. Modern epidemiology calculates odds ratios (risk ratios)[47] for various factors of interest by comparing the number of exposed subjects who develop back pain to the number of nonexposed with back pain. Only a few studies have used this technique.
>
> [While some] investigators have concluded that physically heavy work is not associated with back pain [,] [t]he bulk of reported studies, however, clearly point in the direction of heavy physical work as being a risk factor. Whether this is true for LBP causation or only for disability is unclear.

Malcolm H. Pope et al., *The Workplace, in* OCCUPATIONAL LOW BACK PAIN 117, 121-22 (GX344). On the other hand, writing individually in another book chapter, Dr. Andersson made observations specifically about lifting which are less equivocal. As the Secretary points out in her reply brief, Dr. Andersson does not assert that nursing studies are inconclusive as to the relationship between lifting and LBP. Dr. Andersson in particular was careful to distinguish between establishing a direct cause-and-effect relationship and simply determining possible causal factors in terms of their relative significance: "Most available data concern prevalence and are derived from case control studies. While this permits calculation of odds ratios, causality cannot be determined."[48] Gunnar B.J. Andersson, *The*

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[47]For a discussion of odds ratios, *see supra* note 43.

[48]The Commission acknowledged this same distinction in *Pepperidge Farm*, 17 BNA OSHC at 2020-21, 1995-97 CCH OSHD at pp. 44,032-33. As the Commission observed, neither (continued...)

Epidemiology of Spinal Disorders, *in* THE ADULT SPINE: PRINCIPLES AND PRACTICE (J.W. Frymoyer ed.-in-chief, 1991) 107, 108 (RX227). Dr. Andersson observed that Magora reported a higher prevalence of LBP in nurses than in a number of other occupations including light industry workers, that Cust found occupationally related LBP to be more common in nurses than in teachers, and that Videman concluded that while chronic LBP was common to both nurses and nurses aides, aides who also reported sciatica had a greater incidence of disability compensation. In addition to the fact that he included lifting as well as heavy physical work as a factor "associated with" increased risk of LBP, Dr. Andersson concluded, based on a number of other studies, that "it has been clearly established that back pain can be triggered by lifting"; what varies among the results of various studies is the *frequency* at which back pain occurs after lifting. *Id.* at 127-28. Dr. Andersson noted that Chaffin and Park found the incidence rate of LBP among workers performing heavy lifting to be eight times greater than the rate for workers who lift 20 pounds or less. He also cited a study conducted by Dr. Frymoyer in which Dr. Frymoyer identified lifting and bending as risk factors for LBP. *Id.* at 128 (citing John W. Frymoyer, *Epidemiologic Studies of Low-Back Pain*, 5 SPINE 419 (1980) (GX382)). As Dr. Andersson stated, Dr. Frymoyer "found a direct association between occurrence of low back pain and frequent lifting."[49] Dr. Andersson also observed that this conclusion was consistent with his own findings and those of other researchers reached in other studies.[50] Moreover, Dr. Andersson characterized

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[48](...continued)
data regarding "prevalence," the extent of an illness in a given population at a given point in time, nor data as to "incidence," the number of individuals who develop the illness over a given time period, establish causation.

[49]In this research project, Dr. Frymoyer and his colleagues conducted a retrospective study of 3920 patients in a family health care practice. He found that "occupational factors such as truck driving, lifting, carrying, pulling, pushing, stressful events, bending, and twisting were all significantly related to low-back pain." *Id.* at 420.

[50]Dr. Andersson cited the following: Svensson & Andersson, *Low back pain in forty to forty-*
(continued...)

NIOSH as having concluded that "lifting was a major cause of low back pain" and that "the severity of the injury rate while lifting was proportional to the weight of the object, the bulk of the object, the location of the object at the start of the lift, and the frequency of lifting." *Id*.

In his article discussing epidemiological studies in general, Dr. Jensen addressed the concept of "meta-analysis," "a group of systematic procedures for synthesizing the results of numerous independent studies that made similar comparisons." Roger C. Jensen, *Back Injuries among Nursing Personnel Related to Exposure*, 5(1) APPL. OCCUP. ENVTL. HYG. 38, 42 (1990) (GX274). In applying this technique to a joint review of six epidemiological studies in hospitals and other care facilities,[51] Dr. Jensen explained the value of meta-analysis:

> A major advantage of collective analysis of multiple independent studies can be the light it sheds on the issue of external validity. Each of the studies included in this analysis was based on a nursing population within a single hospital or several hospitals in a geographic region. When analyzing each study separately, there is considerable uncertainty about the validity of the conclusions with respect to a broader population. When analyzed collectively,

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[50](...continued)
seven year old men: Work history and work environment factors, 8 SPINE 272 (1983) ("direct association" between LBP and lifting) and J.D. Troup et al., *Back pain in industry: A prospective study*, 6 SPINE 61 (1981) (half of the instances of LBP experienced by a population of 802 workers studied over a 2-year period were associated with a perceived injury to the back, and 33 percent of these instances occurred during manual material handling). He also cited another study in which Dr. Snook concluded that workers exposed to "excessive" manual handling tasks were three times more susceptible to low back injury. S.H. Snook, *Low back pain in industry*, *in* SYMPOSIUM ON IDIOPATHIC LOW BACK PAIN 23 (A.A. White & S.L. Gordon, eds., 1982).

[51]The studies included the one reported by Stobbe, *supra*, which involved 253 NA's and other nursing personnel at a hospital in West Virginia; a study of NA's and nurses at a mental hospital in Scotland; the Canadian prospective study by Venning, *supra*; a survey of registered nurses ("RN's")at a large hospital in Minnesota; another survey of 168 RN's and 32 NA's in New York; and a study of nurses employed by a large hospital in New South Wales, Australia.

> with the findings from different populations being consistent, the uncertainty about external validity is reduced considerably.

Id. Dr. Jensen concluded that this analysis of the six epidemiological studies constituted a fourth source of data (in addition to biomechanical modeling, epidemiological studies in other industries, and responses by nursing personnel with back problems to compensation claims forms or surveys) "pointing to frequent performance of physically stressful patient-handling tasks as a factor apparently associated with increased probability of nursing personnel experiencing an episode of back pain." *Id.* Dr. Jensen concluded that "[f]rom the findings of the six studies summarized here, the most direct implication is that efforts should be made to reduce the frequency of stressful patient handling." *Id.* at 43.

We find on the scientific evidence presented that manual lifting of residents is a known and recognized risk factor for LBP. Considering also the evidence showing that the frequency and manner in which Beverly's NA's performed their assigned tasks exposed them to compressive forces in excess of limits well-established and accepted in the scientific community, and that Beverly's working conditions resulted in numerous lost-time incidents and prevented Beverly's NA's from performing their usual daily activities, we conclude that the manual lifting of residents was shown on this record to be a hazardous work practice and that Beverly controls the methods used to perform the lifting.

Recognition of the Hazard Presented by Manual Lifting

We now turn to the remaining elements of a section 5(a)(1) violation: recognition of the hazard, the potential for serious physical harm, and the existence of feasible abatement measures. Judge Frye did not address these elements because of his decision to vacate the citations on the ground that the Secretary had not established the existence of a hazard.

As we have said, Beverly's own internal reporting forms contain numerous instances of reports by employees of back pain while moving residents. Benesh, Beverly's corporate safety and loss control manager, regularly visited Beverly's facilities to discuss workmen's compensation issues and would use these reports during those visits. Zoesch, Beverly's loss control director, who testified that back injuries were the most common of the workmen's

compensation claims and that most of those back injury claims occur from resident lifting and transferring or resident care generally, also testified in this regard that Beverly's experience was similar to that of the nursing home industry generally. As part of a settlement with OSHA at a Beverly facility in Connecticut, Beverly hired an ergonomist who studied the injuries reported in that facility and concluded that a primary factor was aggressive or unanticipated movements by residents.[52]

In June 1991 Beverly instituted a "lost time hotline," a program under which each facility was required to report to the corporate office and to the respective regional office by telephone any injury resulting in lost time of one day or more. This report includes a description of the cause of the injury and methods the facility believes could prevent recurrence. The purpose of this program was to increase the awareness of lost time injuries at the corporate level, specifically the vice-presidents of operations. In order to encourage reduction of claims, Beverly periodically distributed lists of the facilities having the greatest workmen's compensation costs. Facility managers were required to work with area managers and regional staff "to establish an action plan to address those high costs."

Zoesch described Beverly's response to the numerous workmen's compensation claims, including training programs such as "Lift with Care," personal protective equipment, and safety incentive and accident prevention programs. As the Secretary notes in her brief, the "Lift with Care" manual refers to the NIOSH limits for safe lifting and recommends either administrative controls (training in proper lifting postures to reduce the "hazard" and proper policies and job procedures) or engineering controls (changes in equipment, design of loads, or work environment) for loads which exceed the NIOSH limits (RX5 at 0001215). The stated goal of "Lift with Care" is to train NA's how to perform transfers in a manner which would reduce the likelihood both of injury to the resident and back injury to the NA.

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[52]Zoesch claimed that the circumstances at issue in the Connecticut facility differ from those in the cases here because the Connecticut facility was cited for "repetitive lifting," but he agreed that it is "common sense" that Beverly should make efforts to reduce the number of lifts performed by NA's during the course of their work duties.

The manual discusses the forces on the back in terms of vertical and horizontal distance, the height at which the lift commences, and frequency and duration and specifically addresses changes in these factors which would "reduce forces" on the back (RX5 at 0001312, 0001321).

In October 1991, Beverly's Northeast region was directed by Beverly's corporate headquarters to institute a policy under which it would provide and require all NA's to wear a device known as a "ProFlex Back Support." In his memorandum transmitting this directive, Beverly's regional vice-president, Oscar Morrison, described this as a "personal protective device which assists our associates in following the correct lifting procedures." This memorandum acknowledged the incidence of back injuries in Beverly facilities: "[T]he back support by itself is not the total answer to our back injury problem . . . . However, it should dramatically reduce the number of back injuries."[53] A brochure produced by the manufacturer of the ProFlex Back Support was distributed to employees who were issued the belt at Blue Ridge. This brochure states, among other things, that "four out of five people experience some sort of back pain in their lifetime" and that "ninety-three million work days are lost each year because of back injury and pain (second only to the common cold)." The brochure also states that "improper lifting technique"is one cause of back injury; it defines ergonomics and advises employees to "look around your facility for areas that make using correct lifting techniques difficult."

Beverly also instructed its administrators that their safety programs should include provisions addressing the use of both the back support and a device known as a "gait belt," which is similar to a "walking belt" except that it does not have handles. It is used in the same fashion as a walking belt. Benesh also recommended that facilities assign NA's to

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[53]The back supports were put in use only at Blue Ridge; at the other four facilities the union objected on the grounds that they do not effectively prevent injuries and their use is a working conditions change which must be bargained. At Blue Ridge, which is represented by a different local, a grievance about back supports was filed at a later date, and that grievance was still being negotiated at the time of the hearing.

teams so that "if a resident required two people to be transferred, then the associates knew right from the beginning of the shift who was going to provide that assistance." Prior to the inspection at Blue Ridge, Benesh and Virginia Swank, Associate Administrator at Blue Ridge, developed the "Safety Plan of Action" to reduce workmen's compensation costs at that facility. Some of the objectives of this plan were to monitor and enforce the use of gait belts at Blue Ridge, to implement team lifting, to ensure that beds were working properly, to add four more Hoyer lifts to the existing two or three lifts so as to provide one lift for each unit of the facility, and to increase employee training in proper lift techniques.[54] The record also shows that Beverly's regional offices performed "Human Resource Audits," the purpose of which was to identify "problem areas" in Beverly facilities. One such audit faulted Blue Ridge for not using gait belts to assist in moving residents and for having an inadequate number of Hoyer lifts. Generally speaking, the evidence presented shows that the Beverly facilities here, as well as Beverly's higher level corporate management, recognized that there was a need for acquiring additional mechanical hoists.[55]

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[54]According to Gary Peters, Assistant Administrator at Blue Ridge, by the time of the OSHA inspection Blue Ridge had implemented the recommendation of the "Safety Plan of Action" that inservices on proper transfer techniques including one "Lift with Care" session be presented each month.

[55]After the inspection Blue Ridge acquired seven of the newer types of electrically-powered hoists on the market, Maxilift and Sara lifts, which are manufactured by a company named Arjo, Inc. NA's found these to be quicker and easier to use, and the residents preferred them over the Hoyer lift because the newer lifts provided smoother and more comfortable movement. They were used for residents who previously had been lifted by hand.

Monroeville had only one Hoyer lift, which was out of service because the slings were inoperable. Beverly ordered new slings, and the Hoyer lift was placed back into operation in the summer or fall of 1991, at least several months before the Secretary commenced her inspection. Thereafter, Monroeville acquired an Invacare lift. At the beginning of calendar year 1992, just after the inspection started, William Meenan, Beverly's area manager, who is responsible for budgeting for 15 Beverly facilities in northwest Pennsylvania including Monroeville and for directing expenditures to achieve "cost-effective" compliance with codes and laws, requested the facilities under his jurisdiction to submit their capital needs.

(continued...)

It is well-settled that in order to meet her burden of proof, the Secretary must show that the hazard was recognized either by the individual employer or its industry.[56] *Inland Steel Co.*, 12 BNA OSHC 1968, 1970, 1986-87 CCH OSHD ¶ 27,647, p. 35,997 (No. 79-3286, 1986). Beverly's position is that the incident reports, OSHA logs, and workmen's compensation documents as well as the precautions it took do not establish awareness on its

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[55](...continued)
Monroeville's administrator requested—and Meenan approved—one additional Hoyer or Hoyer-type lift.

At Richland Manor, prior to the inspection there was one Hoyer lift which was not always in working order or was missing the slings and chains. On the day of the inspection opening conference, new slings were brought in, the lift was placed back in service, and seven residents who previously had been lifted by 2-person manual lifts were specifically designated to be lifted by the Hoyer lift. Prior to that time only one resident, an amputee, had been assigned to be lifted by the Hoyer lift. After the inspection commenced Richland Manor acquired two more Hoyer lifts and one Medi-Man lift, another electrically-powered lift which was easier to use and more comfortable to residents. These new lifts also were used on heavy, non-weight-bearing residents who had previously been lifted manually by two NA's.

Meyersdale had one Hoyer lift and one lift known as a Porta-Lift at the time of the inspection. One additional Hoyer lift was purchased after the inspection since it was considered superior to and safer than the Porta-Lift. Carpenter Care had two Hoyer lifts at the time of the inspection. They were not kept in any one location and they or their accessories were often difficult to find. After Carpenter Care began experiencing mechanical problems with the Hoyer lifts around the time the hearing started, it acquired two Maxilifts which NA's considered to be superior to the Hoyer lift.

[56]Where violations of standards are alleged, the issue of employer knowledge arises under section 17(k) of the Act and relates to knowledge of the existence of the violative conditions, *not* whether those conditions present a hazard, *e.g.*, *Phoenix Roofing, Inc.*, 17 BNA OSHC 1076, 1079, 1993-95 CCH OSHD ¶ 30,699, p. 42,606 (No. 90-2148, 1995), *aff'd without published opinion*, 79 F.3d 1146 (5th Cir. 1996). Here, however, under section 5(a)(1), recognition relates to whether the allegedly hazardous work practices are understood to be a hazard. As the Commission put it in *Con-Agra, Inc., McMillan Co. Div.*, 11 BNA OSHC 1141, 1144, 1983-84 CCH OSHD ¶ 26,420, p. 33,526 (No. 79-1146, 1983), "it is *the dangerous potential* of the condition or activity being scrutinized that must be known specifically by the employer or known generally in the industry" (emphasis added).

part that manually lifting non-weight-bearing residents is hazardous because such lifting practices are normal procedures commonly used in the nursing home industry. Beverly observes that the hug method of lifting is specifically taught through the Red Cross program which is a legally mandated training program for NA's. Beverly cites *Pelron*, 12 BNA OSHC at 1835, 1986-87 CCH OSHD at p. 35,872, as support for the proposition that customary work activities cannot be a "recognized" hazard. Beverly also contends that workmen's compensation records in particular do not show knowledge of "specific hazardous conduct" because compensable claims result from more than just lifts of non-weight-bearing residents and because workmen's compensation costs depend upon factors other than just the nature of the work activity itself, such as the length of disability, the wage rate, and the cost of the medical care involved. Similarly, Beverly argues that the ProFlex belt and "Lift with Care" programs were intended to reduce workmen's compensation costs and therefore do not evince knowledge of a hazard to its employees. As to "Lift with Care," Beverly claims that neither that program nor the NIOSH guidelines state that lifting the weight of a resident is a hazardous practice.

As Beverly points out, Zoesch, who described Beverly's workmen's compensation program, testified that workmen's compensation expenses are influenced by a number of factors other than the type of work activity itself. The record also indicates that the safety programs Zoesch described were implemented in an effort to reduce workmen's compensation costs. At the same time, however, Zoesch also testified that those costs are affected, albeit to a lesser degree, by the lost time incident rate. Zoesch specifically testified that he would be concerned if one of Beverly's facilities reported a high incident rate even if the cost of the resulting claims was relatively low and that in such a case Beverly would consider measures to reduce the incident rate. The objection Beverly raises, that the workmen's compensation reports do not specifically state that a non-weight-bearing resident was being lifted when the incident occurred, does not preclude our finding that Beverly was

aware that many of its residents are non-weight-bearing and a substantial number, if not the majority, of the lifts performed are of such residents.[57]

The fact that Beverly's work practices are typical of those in the industry as a whole does not necessarily establish that Beverly would not understand those practices to be hazardous. As the Secretary points out in her brief, the Red Cross training materials prescribe a procedure under which an NA can lift a *partial weight-bearing* resident when the NA is not wearing a safety belt. However, the materials otherwise instruct the NA to wear a safety belt when lifting a resident (RX41 at 489, 493). Beverly understood the hazard of lifting a non-weight-bearing resident without some sort of back protection because it attempted to implement a program under which its NA's would wear the Pro-Flex back support. Similarly, Beverly also sought to provide some protection to its NA's by instituting requirements for the use of gait belts and increasing the availability of mechanical hoists. While an employer's safety precautions alone do not establish that the employer believed that those precautions were necessary for compliance with the Act, *Wheeling-Pittsburgh Steel Corp.*, 16 BNA OSHC 1218, 1221-22, 1993-95 CCH OSHD ¶ 30,050, p. 41,291 (No. 89-3389, 1993), precautions taken by an employer can be used to establish hazard

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[57]The Secretary also contends that Beverly recognized that its lifting activities were hazardous because its employee medical records establish the existence of back injuries incurred during lifting and transfer activities. In *Pepperidge Farm*, 17 BNA OSHC at 2007, 1995-97 CCH OSHD at p. 44,043, the Commission found hazard recognition in part because of medical records showing diagnoses of back injury from lifting heavy objects. The evidence here is different because the Secretary's expert, Dr. Andersson, reviewed Beverly's medical records and testified that he could not confirm that lifting was the cause of the condition diagnosed in those reports. However, as the Commission stated in *Waldon*, 16 BNA OSHC at 1061-1062, 1993-95 CCH OSHD at p. 41,154, the likelihood that a hazard will occur is relevant only to whether a hazard exists in the employer's workplace and does not determine whether the hazard itself is a recognized one. Furthermore, Dr. Andersson did not preclude the possibility that Beverly's lifting activities could have been responsible for the medical diagnoses. Dr. Andersson's testimony, therefore, does not negate the finding we draw from Beverly's workmen's compensation claims experience and the repeated complaints by NA's of LBP occurring during lifting activities that lifting non-weight-bearing residents is understood to present a hazard.

recognition in conjunction with other evidence. *Waldon*, 16 BNA OSHC at 1061-1062, 1993-95 CCH OSHD at p. 41,154-55 and cases cited therein. Moreover, as the Commission observed in *Pepperidge Farm*, 17 BNA OSHC at 2007, 1995-97 CCH OSHD at p. 44,018, warnings by or to company personnel regarding the existence of a hazard are more persuasive on the issue of recognition than purely voluntary safety precautions. The record here shows that Beverly's managers at the highest level of the corporation recognized the hazard posed by its lifting practices and warned Beverly personnel of the lifting hazard. Similar warnings were also conveyed by the manufacturer of the Pro-Flex belt and distributed by Beverly to its employees.

While Beverly contends that "Lift with Care" does not acknowledge that lifting the weight of a resident presents a hazard, the "Lift with Care" program plainly recognizes the resident's ability to assist as a significant factor in determining whether the transfer can be performed without presenting a hazard to the NA. After the section of the program entitled "Building Lifting Skills While Observing the Principles to Prevent Low Back Pain" (RX5 at 0001292), the program commences with "The Healthcare Transfer Sessions." Here, instructors are directed to address "the unique challenges of the healthcare transfer task" (RX5 at 0001310), which involves the need to "analyze the task" for a number of factors, including the variety of weights and the resident's ability to help. Thus, for example, trainees are told that "the greater the weight of the patient, the more the forces on the back" and that the weight of the load can be reduced by "asking the patient to assist (if capable)." The program goes on to warn that if the NA has any concern that the weight of the resident is too great to lift "without risking the health of your back," the NA should ask for assistance in performing the lift. The program specifically adopts the principle of measuring compressive force through the positioning of the body and the manner in which the lift is performed and states as follows:

> As we saw in the first part of "LIFT WITH CARE" a 75 pound box lifted incorrectly could create 1600 pounds of Compression Force on your back. Obviously most people you will be transferring will weigh more than 75

> pounds. Proper lifting/transferring techniques and assistance, whether human or mechanical, will reduce or eliminate much of the weight and consequently, the forces on the back.

RX5 at 0001318, 0001345-47. Clearly the "Lift with Care" program evinces Beverly's understanding that the tasks its NA's may be required to perform present a risk of injury to the back.[58]

The parties agree that the test for determining industry recognition of a hazard is the knowledge or understanding of safety experts familiar with the workplace conditions or the hazard in question. *Waste Management of Palm Beach, Div. of Waste Management, Inc. of Florida*, 17 BNA OSHC 1308, 1310-11, 1995-97 CCH OSHD ¶ 30,841, p. 42,893 (No. 93-128, 1995). Beverly claims that Drs. Owen and Jensen fail to meet the threshold requirement of being experts familiar with the industry because neither has sufficient actual experience with nursing homes and that, in any event, their testimony fails to establish that the nursing home industry regards any particular type of lift as hazardous. Beverly does not view the NIOSH lifting equations as evidence of industry recognition because research literature does not demonstrate the standard of knowledge in the relevant industry and because the NIOSH documents are merely advisory. We address these contentions in turn.

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[58]Contrary to Beverly's argument, *Pelron* does not stand for the proposition that customary work activities cannot be a recognized hazard in the context in which that question arises in this case. The portion of *Pelron* to which Beverly refers addresses not the question of whether the hazard is a recognized one, but the preliminary question of how the hazard is to be defined for purposes of determining whether it is recognized. *Pelron* simply reiterates the principle that the hazard must be defined in terms of conditions or practices within the employer's control. It rejects a definition which is so broad as to encompass risks that are inherent in the employer's operation. In *Pelron* the employer performed chemical reactions using ethylene oxide which can explode if its vapors accumulate. The Commission concluded that the hazard could not properly be defined as the risk of explosion from accumulated vapors because such a hazard would always be present as a normal incident of the employer's work operations. Here, although resident transferring may be a "normal incident" of Beverly's operations, Beverly controls the method by which that task is accomplished.

The standard for industry recognition is not the knowledge or understanding of experts directly associated with the specific industry in question. So long as the experts who regard the practice or work operation as hazardous are familiar with the conditions in the industry, the Commission does not require that they be employed *in* that industry.[59] *Kelly Springfield Tire Co.*, 10 BNA OSHC 1970, 1973, 1982 CCH OSHD ¶ 26,223, p. 33,113 (No. 78-4555, 1982), *aff'd*, 729 F.2d 317 (5th Cir. 1984). In *Kelly Springfield*, the issue was whether a dust collection system in a tire manufacturing facility presented an explosion hazard due to the absence of pressure venting. Because the Secretary's expert witness was familiar with the type of dust collection system used in the plant, the Commission concluded that his lack of experience in the tire manufacturing industry did not detract from the weight to which his testimony was entitled on the issue of industry recognition. *See Cormier Well Serv.*, 4 BNA OSHC 1085, 1087, 1975-76 CCH OSHD ¶ 20,583, p. 24,620 (No. 8123, 1976) (testimony of compliance officer of industry safety practices used to show industry recognition).

Beverly points out that Dr. Owen had never served as an administrator or supervisor of a nursing home, had never been employed in a nursing home, and had nursing experience only as a nurse in a VA hospital or as a public health nurse, a vastly different type of nursing experience than that encountered in a nursing home. Nevertheless Dr. Owen has conducted considerable research including NIOSH research specifically with respect to back stress in nursing homes. Indeed, Drs. Owen and Garg are the leading researchers with regard to the specific lifting methods used in nursing homes. Furthermore, Dr. Owen was admitted as an expert in both the prevention of back pain among nurses and in the lifting and transferring of residents in nursing facilities. Similarly Dr. Jensen was admitted as an expert in analyzing injuries among NA's in nursing homes. He testified from personal knowledge of NIOSH

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[59]Beverly argues that "the record contains no expert testimony that the nursing home industry considers patient lifting as dangerous." That, however, is not the test for industry recognition under section 5(a)(1).

research on NA's. Although Beverly challenges Dr. Jensen's basis for his opinion as arising "through oversight of studies and review of injury data" Beverly does not explain why these are not an adequate basis to support Dr. Jensen's opinion.

The expert testimony regarding the hazards presented by lifting practices in nursing homes has been set forth above. In brief, Drs. Owen, Garg, and Andersson, using accepted biomechanical techniques, concluded that the lift methods including the lifts observed in Beverly's facilities exceeded safe limits as set forth in the NIOSH guide and specifically gave their opinion that the hug and under arm lift methods were hazardous. Dr. Andersson gave a similar opinion that lifting is associated with LBP based on the epidemiological studies. Dr. Jensen, who had conducted NIOSH studies of lifting by NA's in various kinds of health care facilities, stated that he found lifting to be a substantial factor in the incidence of back pain. Beverly's expert, Dr. Frymoyer, also regarded lifting as a recognized risk factor for LBP. We believe that a preponderance of the evidence supports the conclusion that experts familiar with the nursing home industry perceive lifts such as those performed by Beverly to be hazardous.

We also reject Beverly's criticisms of the NIOSH Lifting Equation as evidence of industry recognition. There is general acceptance in the scientific community of the methodology upon which the NIOSH lifting index is based. Although Beverly challenges the NIOSH document as merely advisory, that alone is not a sufficient basis for concluding that the document does not bear on the issue of industry recognition. Both the Commission and appellate courts have consistently held that voluntary industry codes and guidelines are evidence of industry recognition. *Kokosing Constr. Co.*, 17 BNA OSHC 1869, 1873, 1995-97 CCH OSHD ¶ 31,207, p. 43,725 (No. 92-2596, 1996); *Kansas City Pwr. & Light Co.*, 10 BNA OSHC 1417, 1422, 1982 CCH OSHD ¶ 25,957, pp. 32,539-40 (No. 76-5255, 1982); *Cargill, Inc., Nutrena Feed Div.*, 10 BNA OSHC 1398, 1402, 1982 CCH OSHD ¶ 25,935,

p. 32,486 (No. 78-5707, 1982) and cases cited therein.[60] The evidence here shows that the experts consider the NIOSH Lifting Index applicable to nursing homes, and Beverly's own "Lift with Care" program recognizes and applies the NIOSH compressive force limits. We therefore deem this evidence relevant to establishing industry recognition of the cited hazard.

Potential for Serious Physical Harm

Under the language of section 5(a)(1), the Secretary must show that the recognized hazard is one which is "causing" or is "likely to cause" "death or serious physical harm." The parties agree that this language does not require the Secretary to show that an accident is likely but rather that *if* an accident were to occur, death or serious physical harm would be the likely result. *Babcock & Wilcox Co. v. OSHRC*, 622 F.2d 1160 (3d Cir. 1980).Where an occupational illness can result from exposure to a chemical compound, the Secretary is not required to prove a substantial probability that an exposed employee will contract the disease but only that death or serious harm is likely if the disease does occur. *Kaiser Aluminum & Chem. Co.*, 10 BNA OSHC 1893, 1896-97, 1982 CCH OSHD ¶ 26,162, p. 32,975 (No. 77-699, 1982). The question before us, therefore, is whether an employee who experiences LBP is likely to suffer serious physical harm. *Waldon*, 16 BNA OSHC at 1060-61, 1993-95 CCH OSHD at p. 41,153-54.

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[60]As support for its contention that scientific articles and documents including advisory publications do not establish recognition, Beverly cites two judges' decisions which were unreviewed by the Commission, *Missouri Farmers Assn.*, 9 BNA OSHC 2101, 1981 CCH OSHD ¶ 25,532 (No. 80-5399, 1981) (ALJ, digest), *aff'd*, 674 F.2d 690 (8th Cir. 1982), and *Archer Daniels Midland Co.*, 8 BNA OSHC 2051, 1980 CCH OSHD ¶ 24,771 (No. 79-2509, 1980) (ALJ, digest). Unreviewed judges' decisions have no precedential value. *Leone Constr. Co.*, 3 BNA OSHC 1979, 1981, 1975-76 CCH OSHD ¶ 20,387, p. 24,322 (No. 4090, 1976). The appellate decision in *Missouri Farmers* does not support the proposition for which Beverly cites the case because the issue the appellate court addressed was whether the experts' testimony related to the specific industry in which the employer was engaged. The role of scientific treatises in defining industry recognition was not the issue presented in that case.

The Secretary notes that Beverly's NA's have experienced "debilitating injuries" which have resulted in extensive lost time from work and inability in some cases to perform other normal activities. The Secretary points out that the judge found that LBP may be severe and debilitating. The Secretary cites *Consolidated Freightways*, 15 BNA OSHC 1317, 1991-93 CCH OSHD ¶ 29,500 (No. 86-351, 1991) as support for the proposition that long term debilitating effects constitute serious physical harm.

Beverly's position is that LBP is not serious physical harm because it is merely a symptom, not an injury, and there is no accompanying tissue damage or medical pathology. Beverly also notes that LBP is a common occurrence outside the work environment and that most instances of LBP are of fairly short duration; only a small percentage of LBP sufferers experience LBP for any appreciable length of time.[61] Beverly refers to Dr. Andersson's testimony that "most" patients with LBP recover "within weeks" and more specifically that 90 percent of such patients would recover in two weeks, with about 4 to 5 percent of the population falling into the category of "chronic" sufferers whose pain may last from two to three months.

We agree with the judge that based on the evidence in this record, LBP has not been shown to have any pathoanatomic association, that is, LBP manifests itself as a type of distress which cannot be linked to any detectable tissue or body damage or injury. Dr. Andersson testified, for instance, that in the majority of cases of LBP, it is not possible to isolate a particular tissue that has been damaged and that normally the treating physician can do no more than arrive at a non-specific diagnosis of "lower back strain" or "lower back

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[61]Beverly asserts that most of the periods of LBP experienced by the Beverly employees who testified "fit the usual pattern of a few days to a week or two of missed work and/or light duty" and that in the case of those employees who experienced "a more extended period of disability" other complicating factors were present, such as arthritis, a fall down steps, abdominal surgery, and hypertension. In her review brief the Secretary does not address this representation. Beverly's representation is correct to some extent, but there is also evidence that some of Beverly's NA's were off work for very extended periods of time based solely on the occurrence of LBP.

sprain." Dr. Andersson gave his opinion that there is "very little scientific support . . . in terms of patho-anatomic findings" that the muscles and ligaments of the back are the sources of LBP. The judge relied heavily on Dr. Andersson's testimony, and that testimony supports the judge's finding. Furthermore, Dr. Andersson more explicitly wrote that in contrast to a herniated disc, which "is a specific pathological entity," LBP is a symptom, not an "etiologic [associated with a specific origin] entity." Andersson, *The Epidemiology of Spinal Disorders*, at 121.

The judge also noted that expert witnesses for both the Secretary and Beverly testified that the results of cadaver studies showing damage to discs do not necessarily correlate to LBP. In the article describing the 1991 NIOSH equation which he co-authored, Dr. Garg stated that "[o]ne of the limitations of the vertebra compressive strength data is uncertainty as to whether compression injury to vertebra in cadaver studies is a reliable predictor of the risk of lifting-related low back pain, impairment, or disability." *1991 NIOSH Lifting Equation*, *supra* note 30, at 754. Researchers Chaffin and Park also discussed the results of cadaver studies, noting that healthy discs normally do not rupture; rather, the failure is in the "cartilage endplates which distribute the compression loads to the . . . vertebral segments." In addition, some cadaver results "may" indicate a weakening of endplates by prior stress. If that thesis is true, such weakening "could also contribute to disc degeneration which is now acknowledged as being necessary before the more common and most serious discogenic low-back problems can develop." Thus, Chaffin and Park concluded that "the repeated compressive stresses of life (and lifting in particular) can cause microfractures in the cartilage endplates and subchondral bone of the vertebral bodies which then, theoretically, could alter the metabolism and fluid transfer to the disc." Chaffin & Park, *supra*, at 517. These statements of possible medical theories fall short of establishing that LBP is a known and medically recognized indication of tissue or disc damage or injury.[62]

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[62]In her reply brief, the Secretary refers to statements in the "Lift with Care" manual (RX5 (continued...)

While the Commission's only other decision involving ergonomics, *Pepperidge Farm*, addresses the issue of the proof needed to establish serious physical harm, the issue of whether Pepperidge Farm's lifting tasks exposed employees to serious physical harm was not before the Commission as Pepperidge Farm did not contest the judge's ruling below on the existence of a hazard. With respect to injuries resulting from repetitive motion such as upper extremity musculo-skeletal disorders ("UEMSD's"), the Commission concluded that "*physical disorders* that so adversely affect employees that they are disabled from doing their jobs are serious physical harm . . . even if the disability is not permanent." 17 BNA OSHC at 2032, 1995-97 CCH OSHD at p. 44,045 (emphasis added). We also note that in *Pepperidge Farm*, the Commission found serious physical harm based on the existence of a physically detectable and identifiable injury that can be treated by surgery.

The lead case on the application of the "serious physical harm" criterion to situations in which there is no recognized pathoanatomic damage is *GAF Corp.*, 9 BNA OSHC 1451, 1456-57, 1981 CCH OSHD ¶ 25,281, p. 31,246 (No. 77-1811, 1981), where employees were exposed to excessive levels of airborne compounds of silver. The effects of this over-exposure included argyria, a permanent and irreversible discoloration of the skin resulting from an increase in melanin levels. The judge concluded that because the results of silver exposure are "cosmetic" in nature, they did not rise to the level of serious physical harm. On review, the Commission agreed that the evidence failed to show any "systemic implications

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[62](...continued)
at BE0001271) to the effect that improper lifting practices can cause several kinds of damage to vertebra discs. Because the basis for the statements in the "Lift with Care" manual on which the Secretary relies was not explored in the record, we do not believe that those statements can be given greater weight and be considered more probative on the question of the relationship between LBP and injury than the expert testimony. Morever, the "Lift with Care" manual, which is a training document, does nothing more than assert that pain is a symptom which *may* indicate some damage to the discs. Dr. Andersson's testimony of his conclusions regarding the medical records of Beverly's NA's could not confirm this hypothesis with respect to any of Beverly's employees.

to silver exposure" but held that an employee's "permanent disfigurement" was a sufficient basis on which to find a serious violation.[63]

In *Kaiser Aluminum*, employees were exposed to a substance which was toxic to the skin, causing "chloracne," characterized by the Secretary's expert as a painful and "very serious" form of skin eruption which could persist for at least several months after exposure. Relying on *GAF*, the Commission found chloracne to be sufficiently severe to constitute "serious physical harm." 10 BNA OSHC at 1897, 1982 CCH OSHD at p. 32,975. *Consolidated Freightways*, which the Secretary cites, involved employee exposure to a corrosive dye known as "Flexo Red," which resulted in nausea, vomiting, and light sensitivity, causing employees to miss as much as 7½ weeks of work. An ophthalmologist testified for the Secretary that Flexo Red is toxic to the eye and can cause a temporary loss of vision. The Secretary argued, and the Commission agreed, that where a function of the body is substantially impaired, the impairment need not be permanent in order for the violation to be considered serious. The Commission observed, however, that it would have not found serious physical harm if the symptoms suffered by the employees "had quickly dissipated." 15 BNA OSHC at 1324, 1991-93 CCH OSHD at p. 39,813.[64] As noted in *Pepperidge Farm*, the Commission has also found hearing loss to be serious physical harm even though hearing loss itself may not result in an employee being disabled from working. 17 BNA OSHC at 2032, 1995-97 CCH OSHD at p. 44,045 (citing *Miniature Nut & Screw*

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[63]The Commission cited *GAF* in *Pepperidge Farm*, observing that *GAF* stands for the proposition that serious physical harm can be found even where there is no showing of pathological anatomic change or injury to the body.

[64]As she did in *Consolidated Freightways*, the Secretary here relies in part on her interpretation of "serious physical harm" set forth in her Field Inspection Reference Manual and argues that the Commission should defer to it. Since the Commission's analysis of the meaning of serious physical harm in *Consolidated Freightways* is consistent with the view the Secretary advances in her FIRM, we do not need to decide the issue of deference raised here.

Corp., 17 BNA OSHC 1557, 1559, 1995-97 CCH OSHD ¶ 30,986, p. 43,175 (No. 93-2535, 1996)).

The facts here show that LBP has a substantial and significant effect on the affected employees' ability to perform their normal activities and effectively disables employees for periods of time which are extensive in some instances. We conclude that in view of the debilitating effect on employees and the potential duration of the disability, LBP is properly considered serious physical harm. *See Mahone Grain Corp.*, 10 BNA OSHC 1275, 1279, 1982 CCH OSHD ¶ 25,836, p. 32,317-2 (No. 77-3041, 1981) (disease which manifests itself in lung inflammation, shortness of breath, fever, and weight loss sufficient to incapacitate employees constitutes serious harm even though it is not permanently disabling).

Feasibility

The last remaining element of proof of a violation of section 5(a)(1) is the existence of feasible means of abating or correcting the recognized hazard. The Secretary must specify the proposed abatement measures and demonstrate both that the measures are capable of being put into effect and that they would be effective in materially reducing the incidence of the hazard. *National Realty*, 489 F.2d at 1267; *Waldon*, 16 BNA OSHC at 1062, 1993-95 CCH OSHD at p. 41,155; *Cardinal Operating Co.*, 11 BNA OSHC 1675, 1677, 1983-84 CCH OSHD ¶ 26,652, p. 34,087 (No. 80-1500, 1983). The Secretary must also show that her proposed abatement measures are economically feasible. *Waldon*, 16 BNA OSHC at 1063, 1993-95 CCH OSHD at pp. 41,156-57. The question of whether technologically and economically feasible means exist by which Beverly could have materially reduced the hazard of unsafe lifting to its NA's raises a number of factual matters about which the parties strongly disagree.

"Feasible" means economically and technologically capable of being done. *Baroid Div. of NL Industries, Inc. v. OSHRC*, 660 F.2d 439, 447 (10th Cir. 1981) (citing *ATMI v. Donovan*, 452 U.S. 490 (1981)). Feasible means of abatement are those regarded by conscientious experts in the industry as ones they would take into account in "prescribing

a safety program." *National Realty,* 489 F.2d at 1266. In *Pepperidge Farm*, the Commission held that where an ergonomic hazard could not be abated with a single measure, it was permissible for OSHA to require the employer to engage in a "process approach" to abatement "to determine what action or combination of actions will eliminate or materially reduce the hazard." *Pepperidge Farm*, 17 BNA OSHC at 2033-34, 1995-97 CCH OSHD at pp. 44,046-47. The Secretary must specify the particular steps a cited employer should have taken to avoid citation, and demonstrate the feasibility and likely utility of those measures. The question is whether a precaution is recognized by safety experts as feasible, and not whether the precaution's use has become customary. *National Realty*, 489 F.2d at 1266 n.37; *Pelron Corp.* 12 BNA OSHC at 1835-36,1986-87 CCH OSHD at pp. 35,872-73 (No. 82-388, 1986).[65]

Here, the Secretary has proposed the following abatement measures: mechanical assist devices, revised policies and work practices, and training. To a limited extent, some of the measures are already in place at the five facilities, e.g., Hoyer mechanical lifts, the "Lift-With-Care" and "Pro-Flex Back" programs, and some on-the-job training on lifting techniques. The question of whether these abatement measures will eliminate or materially reduce the potential for harm to the back and upper extremities is complicated by numerous evidentiary disputes as to the proper method for lifting certain residents. These include, whether combative residents should be lifted in mechanical hoists, the efficacy of types of mechanical lifts, whether the configuration and location of the beds and the structural design of bathrooms in certain residents' rooms would preclude use of mechanical lifts in those rooms, and whether the extensive use of hoists as the Secretary proposes would conflict with the restorative objective of long-term geriatric care.[66] The resolution of these disputed issues

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[65]Commissioner Weisberg does not join in the remainder of this opinion.

[66]Beverly's arguments as to proof of reduction of harm have the same basis as its arguments as to the existence of a hazard, however, in addressing those arguments the judge misconstrued the *Benzene* decision and incorrectly held that to prove the existence of a hazard the Secretary must show that Beverly's lifting methods directly caused LBP.

depends on the weight to be assigned to and the inferences to be drawn from conflicting testimony.

Similar difficulties are presented by the evidence of the economic feasibility of the proposed abatements. For example, the Secretary's expert, Mark Perry, an accountant admitted as an expert with respect to the accounting practices in nursing homes including the subject of reimbursement to nursing homes by Medicare and Medicaid, testified to the costs of abatement based on the Secretary's proposals that Beverly purchase a specified number of mechanical lifts and transfer belts and implement a program for their use. In rebuttal to the Secretary's case, Beverly and its expert, Michael Maher, a partner in the accounting firm of Coopers & Lybrand who was admitted as an expert in the field of health care financing, prepared two projections of the cost to Beverly to comply with the Secretary's abatement proposals. These experts dispute items as basic as the cost of equipment, supplies, training, additional NA hours required, and structural alterations.[67] These cases should be remanded to allow both parties to clarify the conflicting testimonial and documentary evidence on feasibility, to enable a judge to make initial findings of fact on the record, and if warranted, to permit the parties to supplement the record with relevant evidence. *See Seibel Modern Mfg. & Welding Corp.*, 15 BNA OSHC 1218, 1228, 1991-93

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[67]The Secretary asserts that Beverly's estimates of its additional labor costs are exaggerated and that Maher's methodology misinterprets the testimony of NA's as to the amount of time taken in lifting and transferring activities. Regarding the expanded use of mechanical assist devices, the Secretary contends that an increased number of lifts would reduce search time, transfer time, and the total number of transfers; however, Beverly claims that her cost estimates were based on only one NA operating a mechanical assist device when two are needed. The Secretary maintains that the use of mechanical lifts would not require additional staffing, and that the newer type lifts only require one NA. Thus, the Secretary did not adduce evidence of any additional labor costs. Maher testified that he did not know whether in-service training was already provided by Beverly or whether new equipment training would be subsumed within current requirements. The Secretary claims sufficient training time is already set aside annually based on Beverly's representations to the Commission and cites Beverly's pre-existing orientation programs and in-service training which cover topics such as lifts and belts. Beverly, however, asserts that at a minimum, an instructor will be required to teach proper use of the newer lifts and additional time would be required to transition and change the "ingrained" behavior of NA's resistant to using mechanical devices.

CCH OSHD ¶ 29,442, p. 39,685 (No. 88-821, 1991) (remand to a judge where feasibility issues are "highly fact dependent" with "close questions of fact that are difficult to resolve").

Once these factual disputes are resolved by the judge on remand, the issue of Beverly's ability to afford the costs of the abatements must be decided. In cases involving the general duty clause, the Commission has generally held that an abatement method is not economically feasible if it "would clearly threaten the economic viability of the employer." *National Realty*, 489 F.2d at 1266 n.37. The Secretary asserts that Beverly can adopt and absorb the costs of the proposed abatement measures with "no threat to either its economic viability or the company's long-term profitability and industry competitiveness." *Waldon*, 16 BNA OSHC at 1063, 1993 CCH OSHD at p. 41,156.

As discussed above, Judge Frye dismissed the citations against Beverly on the basis that the Secretary did not show the existence of a hazard. As a result, the judge did not make findings of fact and conclusions of law with respect to the other elements of a section 5(a)(1) violation. The Commission majority has reversed the one finding the judge did make and found that the hazard of LBP did exist at Beverly's workplaces; it has also found the hazard was recognized and that it was causing or likely to cause serious physical harm. However, in order to decide the issue of whether a feasible means of abatement existed to eliminate or materially reduce the hazard, the record may need to be supplemented [68] in order that a more accurate and credible determination of the costs of compliance at the five facilities and of

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[68]See *Smith Steel Casting Co. v. Brock*, 800 F.2d 1329 (5th Cir. 1986) where the Fifth Circuit vacated the Commission administrative law judge's finding of economic feasibility and remanded the case to the Commission as it found the report (containing two alternative cost proposals) and cross-examination testimony of the Secretary's witness to be doubtful and "preliminary guesstimations" and because the record did not sufficiently present a 'complete' picture of Smith Steel's financial condition. After the Commission in turn remanded to the judge for further proceedings, the parties agreed that a further evidentiary hearing was unnecessary, and Smith Steel provided further financial information pursuant to the Secretary's second set of interrogatories. The judge considered Smith Steel's average annual net profit over a ten-year period and found that the costs of the engineering controls were affordable. On review, the Commission affirmed the judge's decision and declined to decide on a test for economic feasibility to be applied under the cited standard as the court's remand order did not require it to make that determination.

Beverly's financial condition may be made.[69] In light of the not insubstantial but inconclusive evidence in the record, this issue is remanded for initial consideration by a judge.[70]

For the reasons set forth, the judge's decision vacating the citation items at issue in these cases is reversed, and these cases are remanded for further proceedings consistent with this opinion.[71]

/s/
Thomasina V. Rogers
Chairman

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[69]Chairman Rogers notes that Commissioner Weisberg cites to *Lancaster Enterprises, Inc.*, 19 BNA 1033, 1036, 2000 CCH OSHD ¶ 32,181, p. 48,634 (No. 97-0771, 2000) to support his argument that all issues in this case should be resolved by the Commission. However, she observes that the factual issues resolved by the Commission in *Lancaster* involved a citation item alleging a failure to cover skylights at a worksite, a far simpler issue to resolve than the feasibility of abatement in a complex 5(a)(1) case.

[70]Chairman Rogers does not believe that the Commission should decide the issue of feasibility here. Consistent with Commission precedent, she believes the role of initial fact finding, particularly on issues in cases with an extensive evidentiary record, is generally undertaken by an administrative law judge. *Gulf & Western, Energy Prods. Group*, 14 BNA OSHC 1968, 1974, 1991-93 CCH OSHD ¶ 29,205, p. 39,088 (No. 79-4053) (case remanded by Commission for reassignment to an administrative law judge as the evidentiary record was substantial, the necessary factual findings and legal conclusions should in the first instance be entered by an administrative law judge rather than the Commission, and to the extent necessary and appropriate, to give the parties an opportunity to present additional arguments). *General Dynamics Corp., Electric Boat Div.*, 15 BNA OSHC 2122, 2131, 1991-93 CCH OSHD ¶ 29,952, pp. 40,960-61 (No. 87-1195, 1993) (in large and complex case, Commission reversed retired judge's decision and remanded to Chief Administrative Law Judge for reassignment as factual issues should ordinarily be resolved by administrative law judge first, and the Commission then exercises its review function, citing *Seibel Modern Mfg. & Welding Corp.*, 15 BNA OSHC 1218, 1228 n.15, 1991-93 CCH OSHD ¶ 29,442, p. 39,685 n.15 (No. 88-821, 1991)).

[71]Chairman Rogers strongly disagrees with Commissioner Weisberg's mischaracterization of the decisional process in this case. However, out of respect for the deliberative process and the integrity and reputation of the Commission, she declines to respond in kind.

/s/
Stuart E. Weisberg
Commissioner

Dated: October 27, 2000

VISSCHER, Commissioner, dissenting:

I disagree with the majority that the case should be remanded to a judge for further proceedings. For the reasons that follow, I find that the Secretary did not prove the existence of a "recognized hazard" within the meaning of OSH Act section 5(a)(1), 29 U.S.C. § 654(a)(1), and I would therefore vacate the citations against Beverly.[72]

A central issue in this case is what test must be applied to determine the existence of a "recognized hazard," that is, what degree of risk must be shown to prove such a hazard exists in the employer's workplace. According to the Secretary, "in proving the existence of a hazard in this case, the Secretary is only required to prove that Beverly's nursing assistants are exposed to the risk of injury from manual lifting and transfer of patients." Beverly argues, on the other hand, that the Secretary must prove that lifting and transferring patients constituted a "significant risk" of harm to Beverly's nursing assistants. The judge applied a significant risk of harm test, though he seems to have equated significant risk with tort-like causation. Applying this test, the judge found, *inter alia*, that the Secretary failed to prove that "specific unsafe lifting practices had caused injuries."

The majority opinion also applies a "significant risk of harm" test. While they credit the lineage of their test to *Industrial Union Department, AFL-CIO v. American Petroleum Institute*, 448 U.S. 607 (1980) ("*Benzene*"), the majority's significant risk analysis is nothing like the one stated in that case. In *Benzene*, the Supreme Court held that Secretary's authority to regulate by standard under the OSH Act extends only to "significant" risks of harm. The majority is correct that the *Benzene* decision did not provide a specific definition of "significant,"[73] nor did the Court require that the risk be determined to an exact probability

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[72]The existence of a hazard and recognition of that hazard are two elements of a section 5(a)(1) violation (the other two being "causing or likely to cause serious physical harm" and feasibility of abatement). *Pepperidge Farm, Inc.*, 17 BNA OSHC 1993, 2003, 1995-97 CCH OSHD ¶ 31,301, p. 44,014 (No. 89-0265, 1997). The fundamental issues in this case - whether the Secretary has proven that lifting patients is always hazardous or, if not, whether she has established the point at which lifting patients becomes hazardous, and whether Beverly can properly be charged with knowing when lifting patients becomes a workplace hazard prohibited by law - overlap these elements.

[73]The Court did offer its opinion, however, that "some risks are plainly acceptable and others

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of harm "with scientific certainty." *Id.* at 655-56. But neither did the Court say that the Secretary could show that a risk was significant without identifying the harm that could be expected at various levels of exposure. Subsequent standards-setting cases have made that requirement explicit. As the Eleventh Circuit Court of Appeals has said, "OSHA must provide at least an estimate of the actual risk associated with a particular [alleged hazard] . . . and explain in an understandable way why that risk is significant." *AFL-CIO v. OSHA*, 965 F.2d 962, 973 (11th Cir. 1992) (citing *Benzene*, 448 U.S. at 646). "The Supreme Court has said that [OSHA] has 'no duty to calculate the exact probability of harm' . . . Nevertheless, OSHA has a responsibility to quantify or explain, at least to some reasonable degree, the risk posed by each [hazard]." *International Union, UAW v. Pendergrass*, 878 F.2d 389, 392, (D.C. Cir. 1989) (quoting *Benzene*, 448 U.S. at 655).[74] The Court of Appeals for the DC Circuit has also indicated that a reliable estimate of relative risk is essential to defeat a non-delegation attack on the Secretary's standards-setting authority under the OSH Act. *International Union, UAW v. OSHA*, 37 F.3d 665 (D.C. Cir. 1994).

Notwithstanding these legal authorities, the majority does not require the Secretary to estimate the probability of harm from lifting and transferring patients or to identify a threshold unsafe level of lifting. The Commission adopted a "significant risk" requirement in previous section 5(a)(1) cases *because* of the similarities between regulating alleged hazards under section 5(a)(1) and standard setting. *See, e.g., Kastalon, Inc.*, 12 BNA OSHC

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[73](...continued)
are plainly unacceptable. If, for example, the odds are one in a billion that a person will die from cancer by taking a drink of chlorinated water, the risk clearly could not be considered significant. On the other hand, if the odds are one in a thousand that regular inhalation of gasoline vapors that are 2% benzene will be fatal, a reasonable person might well consider the risk significant and take appropriate steps to decrease or eliminate it. Although the Agency has no duty to calculate the exact probability of harm, it does have an obligation to find that a significant risk is present before it can characterize a place of employment as 'unsafe.'" *Benzene*, 448 U.S. at 655-56.

[74]I am puzzled by Commissioner Weisberg's assertion that by simply reiterating requirements stated by the courts in rulemaking cases, I am imposing a greater burden of "scientific certainty"on the Secretary.

1928, 1931-32, 1986-87 CCH OSHD ¶ 27,643, p. 35,973 (No. 79-3561, 1986) (consolidated) (citing *Benzene*, 448 U.S. at 642) (as with rulemaking, Secretary must show that employees are exposed to a "significant risk of harm"). Though the majority claims to have applied the Supreme Court's rulemaking criteria to evaluate the risks at Beverly's facilities, they have actually disregarded the Court's analysis altogether.

Instead, the majority adopts a test that does not require the Secretary to either identify the level of risk from lifting or differentiate the risk of back pain from lifting from the risks posed by other factors or conditions. Though cast in somewhat different terms - "tangible and appreciable risk" - the majority's test is little different from the Secretary's formulation that *any* risk of harm from lifting or transferring patients is sufficient to prove the existence of a "recognized hazard" in this case.[75] (The majority acknowledges this in finding that the scientific studies introduced into evidence in this case prove that lifting patients is a "risk factor" for lower back pain, and concluding the existence of a hazard on that basis). But of course nearly every activity can, under some circumstance, present some risk of harm.[76] I

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[75]The majority provides no particular definition of the term "tangible and appreciable risk," nor do they provide an origin for the term. While the words chosen strongly imply that the risk is measurable, the record here provides no such measurement of risk.

[76]Beverly in fact recognized that lifting patients *can be* hazardous, and had instituted training programs for its nursing assistants accordingly. This training included a certification program for nursing assistants administered under state and federal regulations that was monitored by the American Red Cross. The Red Cross training program included instruction on how to lift patients, a factor that certainly contradicts the Secretary's current position that federal law prohibited such lifting. In addition, Beverly had instituted its own training program, known as "Lift with Care," for instruction of its employees on proper lifting techniques that the company believed were consistent with "ergonomic principles." The Secretary offered no testimony or other proof that Beverly's efforts to train its nursing assistants were less than rest of the industry. In fact the compliance officer testified that there was no industry model or standard for such training against which Beverly's could be measured. *See generally Industrial Glass*, 15 BNA OSHC 1594, 1604, 1991-93 CCH OSHD ¶ 29,655, p. 40,177 (No. 88-348, 1992)(Concluding that Secretary failed to establish that heat stress was a hazard within the meaning of section 5(a)(1), Commission was reassured by employer's efforts to alleviate effects of hot working conditions).

seriously doubt that section 5(a)(1) was intended to sweep so broadly as to render every condition or activity in the workplace a "recognized hazard."

The Commission has not required a quantitative risk assessment where the relationship between the alleged harmful activity and the harm is not subject to factual or scientific dispute and the likelihood of harm if the accident occurs is obvious. On the other hand, the Commission has required a specific risk assessment where the relationship between the alleged harmful activity and harm is not obvious, such as in cases involving exposure to carcinogens. *See, e.g.*, *Kastalon, Inc.*, 12 BNA OSHC 1928, 1931-32, 1986-87 CCH OSHD ¶ 27,643, p. 35,973 (No. 79-3561, 1986) (consolidated). But here the majority eliminates both analytical safeguards, requiring neither that the likelihood of harm from the harmful activity (lifting) be obvious nor that a reliable estimate of risk of back pain from lifting be provided. Under this new formulation, the majority has rendered any activity having any degree of risk a section 5(a)(1) hazard, thereby eliminating "existence of a recognized hazard" as a meaningful element of a section 5(a)(1) violation.

In *Pepperidge Farm, Inc.*, 17 BNA OSHC 1993, 2013, 1995-97 CCH OSHD ¶ 31,301, p. 44,024 (No. 89-0265, 1997), a divided Commission concluded that no significant risk analysis was necessary where "substantial injury is actually occurring." There is testimony in this case from Beverly employees, as well workers compensation claim forms and reports, OSHA 200 logs, and internal corporate accident report forms, confirming complaints of lower back pain by Beverly's nursing assistants. The majority acknowledges that this evidence does not show that lifting and transferring of patients resulted in any particular incidence of back pain. This is particularly so here, since the Secretary provided no evaluation of the medical records by which we could rule out other causes, such as pre-existing conditions, prior injuries, and other non-occupational factors. Even if we knew from the record which back injuries were related to lifting patients, Beverly's director of loss control testified that most patient-lifting back injury claims resulted from incidents involving aggressive behavior or resistance by patients who were being moved. Thus even if a particular employee's back pain did result from patient lifting, it may be more closely related to struggling with aggressive or resistant patients than from the alleged hazards of

lifting the weight of the patients.[77] We simply cannot determine from the evidence of lower back pain among Beverly's employees the extent to which lifting patients caused or contributed to the back pain.

The judge noted two other factors which make it especially difficult to determine from this record whether the lifting and transferring of patients was the likely cause of the employees' lower back pain. One is that the instances of back pain that were reviewed were not accompanied by any physiological change or damage. It is thus even more difficult to identify when the "injury" actually occurred.[78] Second, as the judge noted, there is a wide variety of physical tasks and motions necessarily engaged in by nursing assistants in moving and assisting patients in nursing homes. Furthermore, each patient involves a different set of considerations. He noted that "activities relating to the care of the frail and often sick elderly people must be tailored to their individual needs, capabilities, and potential for independence."[79] Given these uncertainties, the Secretary did not prove her allegation that lifting and transferring patients were the hazards responsible for the employees' back pain.

The Secretary seemingly recognized this problem with her case, and so attempted to prove, primarily by biomechanical modeling and the NIOSH lifting guidelines, that lifting the weight of patients in one and two person lifts is always unsafe, regardless of what other

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[77]These patients are also the least able to be moved by mechanical lift. As a result, even if Beverly eliminated all manual lifting except for these more difficult patients, the effect on incidence of back pain cannot be determined or even estimated on this record.

[78]The majority addresses a related issue in terms of whether back pain without accompanying tissue damage or medical pathology may be "serious physical harm" under the Act. The majority concludes that it may, and in this case, the lower back pain constituted "serious physical harm." I would not reach that question, but acknowledge the judge's concern that without "objective" evidence of injury, proving the relationship between lifting (isolated from other factors) and back pain is more difficult.

[79]Indeed, federal law requires that patients in facilities receiving federal funds be given individualized care and treatment, including nursing and rehabilitative services "to attain or maintain the highest practicable physical, mental, and psychosocial well-being or each resident." Social Security Act, section 1819(b)(4), 42 U.S.C. § 1395i-3(b)(4). Beverly pointed out that in some cases assisting patients to move themselves rather than moving them by mechanical device helped to promote their independence and physical well-being.

factors might have entered into the incidents of lower back pain suffered by Beverly's employees.[80] The judge thoroughly reviewed the evidence based upon biomechanical modeling in his decision and order. He found that the biomechanical modeling testified to by the Secretary's experts purported to show the compressive force of lifting at the weights ascribed to one and two person patient lifts on, an individual's back discs, particularly the L5/S1 disc. However**,** the biomechanical modeling did not establish a connection between the compressive force on the disc and lower back pain, especially where the back pain is not accompanied by damage to the disc. As the judge pointed out, the complaints of back pain that are alleged to be the harm here involved soft tissue back pain, not damage of the discs. And so, even if one accepts the soundness of the scientific theories behind biomechanical modeling, the Secretary's evidence did not establish a connection between disc compression and the back pain at issue here.

The 1991 NIOSH lifting guidelines are based on biomechanical modeling and assumptions. Furthermore, as the judge noted, the committee that drafted the 1991 guidelines recognized the "uncertainties in the scientific studies and theoretical models which have related lifting to low back injuries." Indeed, with regard to the guidelines, the Secretary has acknowledged that "**[t]he numbers by themselves** do not identify a hazardous activity."

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[80]The Secretary also introduced a number of epidemiological studies. The majority is correct that these studies identify heavy lifting as a "risk factor" for low back pain. (Of course these same studies identify a number of other risk factors, some having stronger correlation to back pain than lifting). But I disagree with the majority that these studies establish that lifting patients is a recognized hazard under section 5(a)(1). The studies do not even claim to identify either the point at which lifting of patients becomes unsafe or the degree of risk that is involved in patient lifting. As the Secretary's own expert admitted, the epidemiological studies do not establish the *extent* to which lifting is a risk factor for back pain. Furthermore, while claiming to accept the judge's determination that prospective studies are more informative than retrospective epidemiological studies, the majority simply dismisses the largest such prospective study of back pain, the study of Boeing workers testified to by Beverly's expert witness, Dr. Stanley Bigos, as "not sufficient." But the principal conclusions of the Boeing study - stressing the importance of nonphysical factors in back pain reporting and the complexity of back problem reporting - are not contradicted by any other cited study.

(emphasis in original) OSHA Instruction TED 1.15, *Technical Manual*, Chapter I, section VII (Sept. 22, 1995) *revised by* OSHA Instruction TED 1.15A (Jan. 20, 1999). Another Commission judge has also observed that the NIOSH guidelines have not been validated by any independent study. *Dayton Tire, Bridgestone/Firestone,* 18 BNA OSHC 1225, 1248, 1998 CCH OSHD ¶ 31,515, p. 44,825 (No. 93-3327).

There is a further reason why the Commission should not find a "recognized hazard" based on this evidence. The Commission has previously expressed concern that the term "recognized hazard" under section 5(a)(1) only be used to define legal obligations that employers could reasonably and fairly anticipate and be charged with understanding. *See Pelron,* 12 BNA OSHC at 1835, 1986-87 CCH OSHD at p. 35,872 ("[t]o respect Congress' intent, hazards must be defined in such a way that apprises the employer of its obligations, and identifies conditions or practices over which the employer can reasonably be expected to exercise control").[81] The kind of evidence relied upon by the Secretary to try to establish that one and two person lifts are unsafe reinforces my view that Beverly cannot be charged with having a "recognized hazard" in its workplace when the science on which that claim is based is not even established. As the Commission said in *Kastalon:*

> From a broader perspective, to find violations here would be beyond the limited adjudicatory role of the Commission. We would effectively be establishing a permissible exposure limit through the adjudicatory process without regulated industries having the opportunity for input under the Act's notice and comment rulemaking procedures. While this may be appropriate where appropriate exposure limits have been firmly and scientifically established . . . it is not desirable where it 'requires findings on the frontiers of scientific knowledge.'

Kastalon, 12 BNA OSHC at 1939, 1986-87 CCH OSHD at p. 35,982, citing *Benzene,* 448 U.S. at 656.

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[81]The majority suggests that the concern expressed in *Pelron* for defining the hazard with particularity is only a concern with regard to whether the employer has adequate notice for purposes of preparing for trial. I read the case as stating a far broader concern: whether the employer may reasonably be charged with knowing what its obligations were under the law prior to the inspection.

Similarly here, the Secretary's proof relies on new and still developing scientific theories. The general duty clause is not appropriate for that purpose. As the Commission has previously stated, "we do think it proper . . . to be mindful that by using the limiting phrase 'recognized hazards that are causing or are likely to cause death or serious physical harm,' Congress had a definite purpose to accomplish - to limit section 5(a)(1) to conditions that few could doubt are dangerous enough to warrant abatement." *Anoplate Corp.*, 12 BNA OSHC 1678, 1686, 1986-87 CCH OSHD ¶ 27,519, p. 35,684 (No. 80-4109, 1986). The Commission should in my view follow that less expansive view of section 5(a)(1) and decline to find a recognized hazard where the proof of the existence of a hazard must rely on still unsettled scientific theories. *Diebold, Inc. v. Marshall*, 585 F.2d 1327, 1335 (6th Cir. 1978) (*quoting Graynard v. Rockford*, 408 U.S. 104, 108 (1972) (laws and regulations must be sufficiently clear to "give the person of ordinary intelligence a reasonable opportunity to know what is prohibited, so that he may act accordingly.")

I would therefore vacate the citations for the reason that the Secretary has not shown the existence of a recognized hazard.[82]

/s/
Gary L. Visscher
Commissioner

Date: October 27, 2000

[82]I also record my disagreement with the majority's decision to give the Secretary a second chance to carry her burden of proof on the issue of feasibility. In order to establish feasibility, the Secretary was required to prove that one and two person lifts of patients could be eliminated or substantially reduced, and that doing so would materially reduce the incidence of back pain. Just as the Secretary could not show the degree to which lifting patients increased the incidence of back pain, she was also unable to show the degree to which back pain would be reduced by reducing or eliminating lifting. *See, e.g., Pepperidge Farm*, 17 BNA OSHC 1993, 2039-40, 1995-97 CCH OSHD p. 44,053 (Commission vacated section 5(a)(1) ergonomics citations due to Secretary's failure to establish that the proposed abatement would materially reduce workplace injuries). The Secretary also failed to prove the economic feasibility of her proposed abatement. Although the Secretary acknowledged that her required abatement methods would increase labor costs, she failed to take those into account in estimating the costs of abatement. She also failed to consider the costs of eliminating most manual lifting at Beverly facilities other than the five that were the subject of these citations. In his separate opinion, Commissioner Weisberg raises a question as to whether the company-wide cost to Beverly of eliminating most manual lifting is relevant. But an abatement order on these citations will certainly define Beverly's "general duty" obligations on a company-wide basis (and indeed those of other nursing homes as well), and such evidence was therefore a necessary part of the Secretary's case. In short, the Secretary failed to meet her burden of proof, and the majority's remand only serves to extend the Secretary an undeserved second opportunity to meet that burden.

WEISBERG, Commissioner, Separate Opinion On Feasibility of Abatement:[1]

The Commission has found, contrary to the judge, the existence of a hazard to Beverly's nursing assistants -- lower back pain resulting from regular manual lifting and transferring of nursing home residents. The Commission has also found recognition of this hazard by the employer as well as by the industry, and that the hazard was causing or was likely to cause serious physical harm. I concur in the decision to remand this case on the remaining element necessary to establish a section 5(a)(1) violation, the existence of feasible means of abating or correcting the recognized hazard, but I do so solely for the purpose of resolving an impasse on how to proceed in this case. While I would greatly prefer to see this case move forward rather than backward, the alternative is less palatable, namely that this case would not move at all and would continue to reside at the Commission for some time to come.[2]

I strongly believe that the Commission has a responsibility, particularly considering the age of this case, to decide the feasibility of abatement issue based on the existing lengthy hearing record rather than to simply remand the case to an administrative law judge. *At a minimum*, I believe that the Commission has an obligation to analyze and set forth the proper legal test and the parameters that should apply in the circumstances of this section 5(a)(1) case for determining whether abatement is feasible. Should specific facts not contained in

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[1]It is most regrettable that Chairman Rogers has chosen, for whatever reason, to refuse to permit my views on the question of feasibility to appear as part of the main opinion. For the reasons discussed below, I concur in the decision to remand the remaining issue of feasibility to a judge. I do not, however, concur with my colleague's analysis and discussion of the feasibility issue, what she deems "inconclusive evidence in the record," nor with her nebulous directive to the judge. The last time I counted, Chairman Rogers' feasibility analysis and directive represented the views of but one commissioner - herself. Rather than stating in the main opinion that we are remanding this remaining issue to a judge but do so for different reasons and then setting forth our individual views, the Chairman has insisted instead on masquerading her individual views as those of the Commission in the main opinion, an action that does not speak well for the integrity of Commission decisions.

[2]My misgivings about remanding this case are moderated somewhat by Beverly's public announcement last year that it had put into effect a "Nationwide Back Injury Prevention Program (BIPP)" in conjunction with Arjo, a manufacturer of the newer types of mechanical hoists, and that Beverly was implementing "a no manual lifting environment to reduce staff and resident injuries" using the newer types of mechanical hoists.

the record be necessary to apply that test, and should fairness and due process dictate that the record be reopened for such evidence, *then and only then* should the case be remanded to an administrative law judge.

A brief history of this case is in order. In 1991, more than nine years ago, employees at five Beverly nursing homes in Pennsylvania filed complaints with OSHA alleging that they had suffered back injuries as a result of lifting and transferring nursing home residents. As a result of these employee complaints, OSHA conducted inspections at the five nursing homes in 1991 and 1992, and issued citations under section 5(a)(1), the general duty clause. A hearing was held before Administrative Law Judge John Frye beginning on March 21, 1994 and concluded on June 30, 1994, after 31 trial days. On September 20, 1995, Judge Frye issued his decision. On November 9, 1995, almost five years ago, I directed review in this case.

The hearing record in this case is about 5500 pages and there are hundreds of exhibits. Notwithstanding this voluminous record, a five-year delay by an adjudicative agency in deciding any case is not to be excused lightly. The hardships traditionally resulting from delay and agency inaction are compounded by the framework of the OSH Act under which an employer is not required to abate alleged health and safety violations until after there is a final Commission order. The parties in this case, the employer, the Secretary of Labor, the Service Employees International Union, and especially the employees, the nursing assistants at these five Beverly nursing homes, are entitled to an explanation for the delay, and in the instant case deserve an apology.[3]

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[3]Since much of the delay in this case occurred during my tenure as chairman, the buck stops here and I must take responsibility. *Pepperidge Farm*, an important case dealing with section 5(a)(1) issues relating to lifting hazards and ergonomic hazards, was issued by the full Commission on April 27, 1997, the last day of former Commissioner Montoya's term. At that time, I made a principled determination that major, precedent-setting cases should be decided by a full three-member Commission. In hindsight, had I known that the Commission would be without a third commissioner for the following two years, until after my term as chairman ended on April 27, 1999, and that I would be "home alone" (the only commissioner) for almost one of those two years, I would have acted differently. It is unfair to the

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Generally, in any case that has been before the agency for many years awaiting decision, I would be reluctant to remand the case to a judge rather than to resolve it, if possible, at the Commission level. This is not a case where a remand to the judge is required for an essential credibility resolution. *See Agra Erectors*, 19 BNA OSHC 1063, 1066, 2000 CCH OSHD ¶ 32,175, p. 48,607 (No. 98-0866, 2000) (case remanded to judge for credibility determination pertaining to two key witnesses whose conflicting testimony was essential to determining willfulness).

In my view, no purpose is served by remanding this case. In fact, the Commission is in a far superior position to expeditiously resolve this case than a judge. Judge Frye, who heard the case below, observed the witnesses, and was thoroughly familiar with the voluminous hearing record, has retired from the agency. Thus, remanding this case to a new judge will result in additional and considerable delay as the judge will need to read and become familiar with the extensive hearing transcript and with the hundreds of exhibits. In contrast, the Commission and its staff are already intimately familiar with the record in this case and the Commission has far more staff and resources at its disposal to *expeditiously* resolve the case than does an individual judge.

In light of Judge Frye's decision to vacate the section 5(a)(1) citations based on his finding that the Secretary had failed to establish the existence of a hazard, he did not address the other elements necessary for a section 5(a)(1) violation. However, extensive evidence concerning the other elements was introduced by the parties at the trial and those issues were fully briefed before the judge. In addition, the Commission's briefing order requested that the parties *specifically* address the merits of the remaining elements of the alleged violations, which both the company and the Secretary did.[4]

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[3](...continued)
parties to delay acting upon a case for several additional years in order that it may be decided by a full complement of three commissioners.

[4]Beverly devoted 40 pages in its brief on review to the feasibility of abatement issue. The Secretary spent 20 pages in her brief and another 17 pages in her reply brief addressing this issue. Accordingly, I do not see the need to remand this issue to a judge "to allow both (continued...)

In a recent Commission case, *Lancaster Enterprises, Inc.*, 19 BNA OSHC 1033, 1036, 2000 CCH OSHD ¶ 32,181, p. 48,634 (No. 97-0771, 2000), Judge Robert Yetman had vacated a citation item alleging a failure to cover skylights at the worksite on the ground that there was no evidence that employees were exposed to the hazard and accordingly he did not address the other elements of the violation. In that case, decided by the Commission August 1, 2000, we reversed the judge with respect to employee exposure but did not remand the case to Judge Yetman to consider the other elements. Instead the Commission itself addressed the other elements of the violation (applicability of the standard, noncompliance, and knowledge) based on the hearing record. In my view, the fact that the remaining feasibility of abatement issue here is not an easy one to decide is certainly no justification for remanding this case, particularly considering its age.[5]

The fact that the parties may dispute the relevancy of certain testimony or specific studies, and even if, as Chairman Rogers suggests, their resolution depends on the weight to be assigned to and the inferences to be drawn from conflicting testimony, that is not a valid reason for remanding this case, especially to a judge who did not hear the case or observe the witnesses and is unfamiliar with the lengthy hearing record. Earlier in this opinion, in deciding the issue of whether the Secretary had established the existence of a hazard, the Commission demonstrated its capacity and ability to resolve numerous questions of fact that were complex, strongly disputed, and frequently involved the relevancy and weight to be given conflicting testimony and studies. Much of this same conflicting testimony and the same studies are also directly related to the feasibility of abatement issue.

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[4](...continued)
parties to clarify the conflicting testimonial and documentary evidence on feasibility," as my colleague proposes.

[5]My colleague contends that *Lancaster Enterprises* does not apply here because it was an easier case with far simpler issues to resolve. She appears to be suggesting that, *notwithstanding the age of a case*, the Commission should apply a "degree of difficulty" test -- if it is an easy case then the Commission decides it based on the hearing record, but if it is difficult we punt it to a judge.

My colleague acknowledges that with respect to technological feasibility, Beverly is asserting the same arguments it also relied upon to challenge the existence of a hazard.

The unresolved issue of whether the Secretary has met her burden of showing that her proposed abatement measures are feasible is, in many respects, one of first impression -- Commission case law is not well developed for determining whether abatement is economically feasible in a section 5(a)(1) case. Thus, it is initially and primarily a legal question. The role of an administrative law judge is primarily as a fact finder who also is called upon to apply extant Commission case law to the findings of fact. It is, therefore, particularly inappropriate and unwise to remand this legal issue to a judge to determine in the first instance the relevant legal standard to apply.

Chairman Rogers suggests that there are questions of fact that need to be resolved by the judge and information not in the record that we need to know in order to decide whether abatement is economically feasible.[6] For example, my colleague notes that there is a dispute between the Secretary and Beverly as to the cost of complying with the Secretary's abatement proposals. This disagreement relates primarily to estimates of additional labor costs. The Secretary's cost estimate failed to take into account any additional labor costs while the company's estimates of additional labor costs appear to be overstated. Assuming, without deciding, that the cost to Beverly to comply with the

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[6]Chairman Rogers raises the possibility that the record may need to be supplemented with respect to compliance costs and "Beverly's financial condition," citing *Smith Steel Casting Co. v. Brock*, 800 F.2d 1329, 1339 (5th Cir. 1986). In that case, however, the *only* information that the Secretary had presented concerning the company's economic ability to implement the proposed abatement measures was its gross income and net profit for the year preceding the inspection (both numbers having come from the company's answer to interrogatories). In contrast, Beverly's relevant "financial condition" is adequately described in the record. Beverly is a large company that is publicly-traded on the New York Stock Exchange and had assets in 1993 of just under $2 billion. The Secretary introduced into evidence Beverly's 1991 Annual Report, its 1992 Annual Report, and its 10K filing with the Securities and Exchange Commission for the quarter ending June 30, 1993. These materials provide the company's financial statements, balance sheets, and cash flow statements for 1991, 1992, and the first half of 1993, and also include the comparable financial data for the years of 1987, 1988, 1989 and 1990.

Secretary's abatement proposals is somewhere between the two estimates, the primary question as to the appropriate legal test to apply to economic feasibility in a section 5(a)(1) case remains to be resolved. Is it that abatement is not economically feasible if it would clearly jeopardize the economic viability and continued existence of the company, is it that it would threaten the company's long term profitability, or is it a much lower bar, such as it would simply result in out-of-pocket unreimbursed costs?[7]

My colleague does not address Beverly's paramount argument that the financial costs for abatement at its hundreds of other nursing homes must also be considered in determining whether abatement is economically feasible.[8] She would apparently leave this matter to be handled by the judge who would then have to determine whether to supplement the record with this information. This information would be relevant only if the Commission finds that the evidence already presented by the parties pertaining to the financial costs of abatement at the five cited nursing homes is insufficient. Such a determination would have to be premised on the unprecedented *legal* conclusion that the Secretary must prove, *company-wide*, the economic feasibility of abatement at each of Beverly's 800-plus facilities individually, or all of them combined, or as the dissenting opinion suggests possibly all nursing home operators, in order to establish that abatement is economically feasible at the five cited facilities.

In my view, the Commission can and should answer these novel questions and only then, if necessary and proper, remand this case to an administrative law judge. This decision provides little useful guidance or direction to the judge on how to handle the feasibility of abatement issue. To simply punt this case to a judge under a *National Realty* banner, without more, does not allow for a fair catch.

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[7]Also, what is the significance, if any, that Blue Ridge was being operated at a loss, and that any additional unreimbursed expenses would add to that loss? Should abatement of the hazards to nursing assistants at the five cited Beverly facilities depend on the profitability of the individual facility in which the exposed nursing assistant happens to work?

[8]The judge below did not permit the introduction of evidence relating to Beverly's costs of abatement at facilities other than the five cited facilities, ruling that evidence of abatement costs at Beverly's other nursing homes was not relevant.

Dated: October 27, 2000

/s/

Stuart E. Weisberg
Commissioner