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Minnesota Technical Institute System

State Board of Vocational Technical Education Capitol Square Building 550 Cedar Street St. Paul, MN 55101

October 20, 1989

Campus Locations

ALBERT LEA ALEXANDRIA ANOKA AUSTIN BEMIDJI BRAINERD **BROOKLYN PARK** CANBY DETROIT LAKES DULUTH EAST GRAND FORKS EDEN PRAIRIE EVELETH FARIBAULT **GRANITE FALLS** HIBBING HUTCHINSON JACKSON MANKATO INNEAPOLIS MOORHEAD PINE CITY PIPESTONE RED WING ROCHESTER ROSEMOUNT ST. CLOUD ST. PAUL STAPLES THIEF BIVER FALLS WADENA WHITE BEAR LAKE WILLMAR WINONA Michele Swanson Commission Secretary 55 State Office Building

St. Paul, MN 55155-1201

Dear Ms. Swanson:

In response to your request received October 20, 1989, I am enclosing a copy of the Statement of Need and Reasonableness for the proposed rules, Technical Occupations, as well as Swine Production Management as published in the September 25, 1989, State Register.

If you have any questions, feel free to contact our office at 296-3929.

Sincerely,

Somray 1 cs Georgia Pomroy,

Licensure Revision Specialist

Enclosure

NEED AND REASONABLENESS

MINNESOTA STATE BOARD OF VOCATIONAL TECHNICAL EDUCATION

<u>Statement of Need and Reasonableness</u> <u>for licensure of Postsecondary</u> <u>Vocational Technical Personnel in</u> <u>Technical Occupations</u> <u>and Agriculture</u> <u>Occupations</u>

Revision of Technical Occupational Instructor licenses in automated systems technology/robotics, air and water analysis, and water/waste treatment technology and licensure development for new venture programs:

 3700.0710 Audio Recording Specialist
 3700.0715 Automated Systems Technology
 3700.0720 Printed Circuit Board Technology
 3700.0725 Environmental Technology
 3700.0730 Laser Electro Optics Technology
 3700.0735 Metallurgical Technology
 3700.0740 Metrology Technology

Minor rule modifications and rule number change to existing revised licenses:

3709.0200 Artificial Intelligence Technician
3709.0210 Vibroacoustics Technology
3709.0220 Plastic Composites Technology
3709.0280 Telecommunications Systems Technology

New Venture Program in agriculture instructors license:

3700.0285 Swine Production Management

The statutory authority for the State Board of Vocational Technical Education to promulgate these rules is contained in Minnesota Statutes section 136C.04, subd. 9 which states: Licensure. The State Board may promulgate rules, according to the provisions of Chapter 14, for licensure of teaching, support, and supervisory personnel in postsecondary and adult vocational education. The State Board may adopt licensure rules according to Sections 14.29 to 14.36 when necessary for continuous programs approved by the Board and when the Board determines appropriate licensure standards do not exist.

BACKGROUND INFORMATION

3700.0700 Technical occupational licensure rules represented here focus on three processes. For the purpose of clarification each process will be defined here.

1. <u>New Venture Program Licenses</u>

The State Board of Vocational Technical Education evaluates and approves initial and annual program applications according to the State Board of Education rules 3505.6100 to 3505.6400. Approximately ten to fifteen new venture programs receive approval annually. A new venture program is one which has not been previously offered within the technical college system and represents an entirely new program to be delivered. The office of the Attorney General Advised the State Board of Vocational Technical Education that the emergency rulemaking power of the Board according to sections 14.29 to 14.36 no longer was in The Board, therefore, is using the permanent rule effect. process for new venture programs since no appropriate licenses for these categories exist. The new venture programs represented in this statement are:

3700.0710	Audio Recording Specialist
3700.0715	Automated Systems Technology
3700.0720	Printed Circuit Board
	Technology
3700.0725	Environmental Technology
3700.0730	Laser Electro Optics Technology
3700.0735	Metallurgical Technology
3700.0740	Metrology Technology

2. <u>Revision of Current Licenses</u>

The State Board of Vocational Technical Education determined a need to revise postsecondary and extension vocational education licenses for instructors and support staff. A review of existing rules suggested the licensure rules needed clarification for the benefit of existing parties. The rules had not been revised for over ten years. The majority of the issues identified were related to interpretation of the terms: relevant education, relevant occupational experience, and vague or nonexistent course In addition, the Technical College System is requirements. undergoing a major restructuring of programs. The restructuring effort structures programs into individual courses and identifies the course into credit hours. This produced an added incentive for licensure revision due to the fact existing licenses licensed for programs only, thus limiting an instructor from teaching a particular course in his/her area of expertise to anyone other than a student registered within that program.

The formal rule revision occurs through a process which involves a general advisory committee. Representatives from licensed postsecondary: administrators, supervisory staff, vocational instructors and support staff, private trade school and the Board of Teaching, State Board of Vocational Technical Education staff, the Minnesota Council of Vocational Education, State Board of Education staff, and finally Licensure staff from the State Board of Vocational Technical Education serve in an ex-officio status. The committee formulates general licensure guidelines and procedures for selecting individuals to serve on specific This committee then reviews and makes committees. recommendations on the final licensure draft. As the restructuring effort on a program is completed the licensure revision for that specific area is started. It happened that three new venture programs, although they did not have specific licenses, fit into the restructured format for some existing programs licensed under current rule. For that reason, the programs under current rule were revised and incorporated with the new venture programs to develop a broader license with a base of knowledge relevant to the core content to be in all the programs. The license and the programs represented are listed as follows:

3700.0715 Automated Systems Technology

To include automated machinery systems/packaging, automated manufacturing technology, robotics, flexible automated technology, and automated systems technology.

3700.0725 Environmental Technology

To include air and water analysis technology, water/waste treatment technology, environmental chemical technology, environmental technology, food management laboratory and testing.

3. Editorial and minor rule modification

New venture programs have been developed and placed in a temporary rule number until permanent occupational block licensure revision began. The temporary rule number is 3709. The following licenses in the technical occupational area will be moved to the permanent technical occupational rule numbers of 3700.0700. The language changes are editorial and represent the format used in the permanent revisions.

A notice of Intent to Solicit Outside Opinion Regarding Proposed Rules for Licensure of Postsecondary Technical Occupational Programs was published in the <u>State Register</u> on June 5, 1989. A resolution to authorize rule development was passed by the State Board of Vocational Technical Education on June 13, 1989. Several committee meetings, a general advisory committee meeting, and consultation with the Revisor of Statutes and the Attorney General's office resulted in the proposed rules. The State Board of Vocational Technical Education staff then made the final rule recommendations.

GENERAL INFORMATION

The proposed permanent rules follow the precedent set by the revised agricultural instructor requirements adopted September 12, 1987, the revised business and office rules adopted February 6, 1988, and administrative licenses adopted on November 26, 1988. There are four major changes within the previous revisions and reflected within these revisions.

Crossover areas. The crossover areas compliment the 1. technical college system's program restructuring. This effort converts programs to courses and then courses to credits. Thus the license allows the holder to teach a particular program and specified courses in any program throughout the technical college The courses listed as crossovers are reasonable since system. they are a result of the expertise acquired via the occupational and/or educational experiences specifically required of the license holder. This is needed to remove an artificial barrier which, in the past, allowed the individual to teach only within a This makes it possible to implement the restructured program. programs with appropriately credentialed staff, allowing an instructor to teach specific courses anywhere within a college.

Occupational experience requirements. The occupational 2. experience requirement identifies the job titles which will be accepted to meet licensure requirements. This specificity is needed to provide both the applicant and the hiring authority with information which will be used in making application for the The occupational experience requirements are reasonable license. because they are conceptually and functionally represented in the education programs and in the occupations for which the programs prepare individuals. There is also an increase in the total number of occupational hours from current rule of 6000 hours to revised rule of 8000 hours. This is reasonable since credit is given for educational experiences which relate directly to the occupation in question. In addition, credit will be given for teaching experience as it relates directly to the occupation being taught. Since these substitutions allow for a total of 4000 hours of occupational experience, the increase to 8000 hours is reasonable. In addition, the increase to 8000 hours represents only a total of one year. Since the crossover areas require more specificity required to teach individual courses throughout the technical college system, a greater depth and breadth of knowledge is required which is represented in the additional year of experience or education.

3. <u>Recent occupational experience.</u> There is an increase in recent occupational experience form "500 to 1000 hours in the last five years" to "2000 hours in the last five years". This increase is necessary so that individuals teaching programs and courses are knowledgeable about technical, economic and industrial changes as they relate to their specific occupational field. It is reasonable since it allows a five year time frame in which to acquire one year or 2000 hours of occupational experience. It would be possible, therefore, to obtain the additional 2000 hours by working only four summers. 4. <u>Substitution for occupational experience.</u> This subpart is necessary as a means of allowing teachers to expand into new, modified or restructured programs which reflect both new content area and existing content. The utilization of teaching experience in specified programs assures that only teaching experience which is conceptually related to the new, modified, or restructured program is allowed as a substitute for recent occupational experience. This recognizes specific knowledge in current programs as applicable to new programs which contain a portion of the same or similar content. 500 hours of recent occupational experience is still retained for the new licensure area to assure up-to-date industrial exposure to the occupation. This amount is reasonable because it can be obtained over five years and is only 12 1/2 weeks.

3700.0700 LICENSES IN THE TECHNICAL OCCUPATIONAL AREA

Subpart 1. <u>Listed Here</u>. This subpart informs the applicant of the requirements which must be met for an instructor seeking licensure under rules 3700.0700. It also refers to 3700.0100 which contains the general licensure requirements for all instructors in the Technical College system. There are no changes in 3700.0100.

Subpart 2. <u>Recent Occupational Experience.</u> Indicates to the applicant the total number of occupational recency hours required within the five years preceding the application for licensure.

Subpart 3. <u>Does Not Apply</u>. Repeals existing 3515 charts for the specified 3700.0700 rules and specific 3515 rules which conflict with the 3700 rules.

3700.0705 to 3700.0755 <u>Specific Licensure requirements.</u> Specifies for the applicant specific authorization and requirements for each individual license.

Subpart 1. <u>May Teach.</u> Lists programs and courses which license holder may teach.

Subpart 2. <u>Other Requirements</u>. Refers to the other requirements an applicant must meet for licensure as referred to above.

Subpart 3. <u>Occupational Experience Requirement</u>. Specifies number of hours and specific occupational areas acceptable for instructor licensure in the specific occupational program.

Subpart 4. <u>Substitutions for Occupational Experience</u>. Degrees, diplomas, or coursework is identified which enables the applicant to substitute specific educational experience for designated number of occupational hours.

Subpart 5. <u>Substitution for Recent Occupational Experience</u>. Identifies relevant current teaching experience which can substitute for a portion of the recency requirement of 3700.0700, subpart 2.

3700.0760 <u>Conversion to Existing Licenses.</u> Informs interested parties of rule numbers and converted licensure categories.

The 3700.0700 rules will be implemented using current processes and should not incur additional expense.

SPECIFIC_LICENSURE_REQUIREMENTS

3700.0710 AUDIO RECORDING SPECIALIST

Subpart 1. May Teach. This license will allow the individual to teach in the audio recording specialist program and content specific to audio recording, basic audio recording and reinforcement, audio for nonmedia professionals, mixing I and II, and sound tracks for slide production. This is a reasonable crossover area since the occupational experience required in subpart 3 would assure the candidate has had experience in these specific areas. The experience as listed indicates the applicant must be the primary audio engineer in multi-track recording which must include music and other audio forms for television and other film areas. In this experience at least three of a described list of activities must be experienced. It is reasonable to assume an individual with this background would have the capabilities to teach the program content and specifically the crossover content which remains only within this particular program.

Subpart 2. <u>Listed here.</u> Refers to the general requirements as specified in 3700.0100. There are no changes in this part. 3700.0700 is explained under General Information, Item 4.

Subpart 3. Occupational experience requirement. Individuals graduating from this program are expected to have a base knowledge of production including creative aspects of the field such as scripting and design. They may also work as an independent in the field. Certainly it is assumed they may perform a variety of production tasks under the direction of a department manager. It is therefore reasonable to require an instructor to be at a level of employment which would assure that individual had the multifacet background to teach the program content. That level is listed as a primary engineer. In addition, the experience statements list the necessity for multi-track experience in both music and other audio forms. The applicant must then have experience in at least three of the This is a reasonable requirement since an individual described. teaching this program must have the breadth and depth of knowledge to cover a broad range of music and other audio recording productions since that is the program focus.

Subpart 4. <u>Substitution for occupational experience</u>. The substitutions in this subpart are consistent with the previous revised licenses in postsecondary vocational technical education. The substitutions as allowed are in the ratios set by these licenses and there is no change in these ratios. The degrees, diplomas and courses are in audio-recording, television or radio production, or broadcasting. These are reasonable substitutions since all relate directly to the field of audio recording and contain content which is offered in the technical college program.

3700.0715 AUTOMATED SYSTEMS TECHNOLOGY

Subpart 1. May teach. An instructor with an automated systems technology license may teach in the automated system programs within the technical college system. The automated system programs include robotics, manufacturing and packaging. All these automated system programs are included under this license due to program restructuring which has resulted in all the programs having the same core in electronics and manufacturing. All programs use the same automation technology differing primarily in the application of the process. Since the experience as described in subpart 3 relies on experience in both manufacturing and controls with no substitution for the 4000 hours it is reasonable to assume the applicant must have the breadth and depth of knowledge to teach automation technology as well as the types of application. The crossover areas as listed remain in the technological experience level required of an applicant. In addition, they are restricted to items taught in the program itself which are cornerstones of the program.

Subpart 2. <u>Other requirements</u>. This refers to the general requirements as specified in 3700.0100. There are no changes in this subpart. 3700.0700 is explained in General Information, Item 4.

Subpart 3. Occupational experience requirement. A minimum of 4000 hours in both automated manufacturing process application and industrial controls is required. This is a reasonable requirement since this license allows an applicant to use automation in different application programs. Therefore it is also reasonable that no substitution is allowed for this experience, assuring that the candidate will have this level of skills and knowledge. The other experiences as listed recognizes areas an individual may have gained prior to continuing on to the higher level of application but which also are a portion of the programs. While it is reasonable to allow some of this experience as valid due to part of the program's content in and of itself, it would not be sufficient to teach all of the programs or all of the content. Thus the 4000 hours minimum is a reasonable requirement for the foundation of the license.

Subpart 4. <u>Substitution for occupational experience</u>. The substitutions as allowed are at the ratio of existing revised licenses. There is no change in this ratio. The degrees, both bachelor's and associate, the diplomas and courses are only in areas of industrial technology which are applicable to automated technology and are therefore reasonable substitutions. These areas are in robotics, process control, computer technology as it applies to programming, and electronics. Each area has direct application to major program content and is therefore reasonable.

Subpart 5. Occupational recency substitution. The teaching

experience allowed is only in core content and within automated systems technology only. It is therefore a reasonable substitution. It is assumed the instructor would have contact with industry and the advisory committees which allows the opportunity for currency in the fields. In addition, the individual would not be able to substitute out the 4000 hours of experience in automated manufacturing processes and industrial controls. It is assumed the candidate would have current industrial information by virtue of contact and work with the advisory committees as well as industry. In addition, the individual would still need to have the remaining 500 hours of recency. The ratio of two hours of teaching to substitute for one hour of occupational experience is the same as for previously revised licenses and there is no change in this ratio.

3700.0720 PRINTED CIRCUIT BOARD TECHNOLOGY

Subpart 1. <u>May teach</u>. An instructor with a printed circuit board technology license may teach in the printed circuit board technology program and basic crossover content as relates to the occupational and educational experience as described in subpart 3. The occupational and educational experiences are consistent with the crossover areas as listed and remain within the level required of the applicant and is therefore reasonable. An applicant is restricted to items taught in the program itself.

Subpart 2. <u>Other requirements</u>. This refers to the general requirements as specified in 3709.0100. There are no changes in this subpart.

Subpart 3. Occupational and educational experience requirement. Educational and occupational experience is required of this applicant. The level of content in this program involves design and manufacture of electronics equipment, home entertainment equipment, computers, word processors, telecommunications equipment and process controls. It is reasonable to require the instructor to have at least two years of education in specific areas to assure the scientific principles which form the foundation of this program. The educational areas were chosen for their content which involves electronics or types of drafting or design technology. The education required holds a portion of the content taught within the program and is therefore reasonable. In addition, the applicant must have occupational experience designing printed circuit boards, which must include This is a reasonable occupational requirement since the CAD. graduates of this program will be employed in this capacity. CAD is the foundation of printed circuit board technology therefore is also a reasonable stipulation. The ratio of occupational experience is directly related to the amount of education with a minimum of 4000 hours. This ratio is the same as in preceding revised licenses and there is no change in this ratio.

Subpart 4. <u>Occupational recency substitution</u>. The teaching experience allowed is in core content and within computer-aided circuit board technology only. It is therefore a reasonable substitution. It is assumed the instructor would have contact with industry and the advisory committee which allows the opportunity for currency in the fields. In addition, the individual would still need to have the remaining 500 hours of recency. The ratio of two hours of teaching to substitute for one hour of occupational experience is the same as for previously revised licenses and there is no change in this ratio.

3700.0725 ENVIRONMENTAL TECHNOLOGY

Subpart 1. May teach. An instructor with an environmental technology license may teach in all the environmental based programs within the technical college system. The programs are all environmental technology related to air, waste, water, and laboratory testing. The chemistry, laboratory and testing skills in these programs require the same base of knowledge despite their application. The programs are a balance between scientific courses and mechanical applications to become an entry level operator. Based on the educational and occupational experiences required in subpart 3 it is reasonable to assume the applicant would have the base of knowledge, the skills, and the attitudes to teach this specific content. The crossover areas are content which can be expected to be within their educational criteria as well as their occupational experience and are therefore reasonable.

Subpart 2. <u>Other requirements</u>. This refers to the general requirements as specified in 3700.0100. There are no changes in this subpart. 3700.0700 is explained in General Information, Item 4.

Subpart 3. Occupational and educational experience requirement. Educational and occupational experience is required of this applicant. The level of content in this program involves scientific content which is better taught within an academic environment. It is reasonable to require a minimum of 2 years education in areas which would assure the foundation and consistency for the foundation areas of chemistry and microbiology. The education was chosen for content in the scientific areas of the programs. In addition, the applicant must have occupational experience with a minimum of 2000 hours in laboratory analysis in specific areas or operational testing, sampling, and monitoring of effluent discharge. This experience is reasonable since graduates of the programs will be expected to have a base knowledge of laboratory testing techniques. The remaining experiences recognize the various occupational areas in which an applicant may have begun employment. These areas are also reflected in the program content and are therefore reasonable. The ratio of occupational experience is directly related to the amount of education with a minimum of 4000 hours. This ratio is the same as in preceding revised licenses and there is no change in this ratio.

Subpart 4. <u>Occupational recency substitution</u>. The teaching experience allowed is only in core content and within areas of environmental technology. It is therefore a reasonable substitution. It is assumed the instructor would have contact with industry and the advisory committee which allows the opportunity for currency in the field. In addition, the opportunity for currency in the field. In addition, the individual would still need to have the remaining 500 hours of recency. The ratio of two hours of teaching to substitute for one hour of occupational experience is the same as for previously revised licenses and there is no change in this ratio.

3700.0730 LASER ELECTRO OPTICS TECHNOLOGY

Subpart 1. <u>May teach</u>. This subpart identifies the program and specific courses an instructor may teach. The three courses listed are specifically in laser technology. An applicant with the experiences described in subp. 3 can be expected to have the skills and knowledge required for this content and are, therefore, reasonable.

Subpart 2. <u>Other requirements</u>. References requirements as listed in 3700.0100. There are no changes in this subpart. 3700.0700 is explained in General Information, Item 4.

Subpart 3. Occupational experience requirements. An individual with experience in maintenance testing and operation would have experience in construction and installation in order to reach this level. The three systems listed as appropriate areas of laser experience are industrial, medical and laboratory systems. It is reasonable to require the three levels of experience since graduates of this program may be hired in any of these areas. The systems listed are appropriate since any of these systems contain pulsed state lasers, molecular lasers, argon lasers, solid state lasers and vacuum technology, the core components in this program.

Subpart 4. <u>Substitution for occupational recency</u>. The bachelor's or above major is in engineering fields which include electronics and gyroscopes. This is reasonable since electronics is the basic foundation of this program. Gyroscopes is incorporated.

Other degrees and diplomas substituted are as follows:

Laser technology is reasonable as a substitution since it represents the core of laser electro optics technology.

Electronics is a reasonable substitution since it is the program's foundation.

The courses as listed represent knowledge obtained by the experience described in subp. 3 or occupational substitution in subp. 4 and are, therefore, reasonable.

Subpart 5. <u>Substitution for occupational recency</u>. Teaching in laser electro optics technology is the only substitution allowed. An instructor would be working with an advisory committee and making industrial visits and thus would be up-to-date on current technology. This is, therefore, a reasonable substitution. This substitution follows the precedent set by previously revised licenses.

3700.0735 METALLURGICAL TECHNOLOGY

Subpart 1. <u>May teach</u>. An instructor with a metallurgical technology license may teach in the metallurgical programs within the technical college system and courses which are specific in metallurgical content. This is reasonable due to the criteria as described in subpart 3. An applicant meeting the educational and occupational experience requirements of this subpart can be expected to have the necessary skills and knowledge required to teach this program and metallurgical content. The two years of postsecondary education required is to allow the candidate the necessary knowledge base in the sciences to teach this program. On the basis of this educational and occupational experience, it is reasonable to assume the applicant would have the breadth and depth of knowledge to function in an instructor capacity in this area.

Subpart 2. <u>Other requirements</u>. This refers to the general requirements as specified in 3700.0100. There are no changes in this subpart. 3700.0700 is explained in General Information, Item 4.

Subpart 3. Occupational and educational experience requirement. An applicant must have a minimum of two years postsecondary education in scientifically based content appropriate to teaching the principles and phenomena included in this program. This base of knowledge in physics and chemistry is contained in the engineering, metallurgy, industrial technology, chemistry, physics, laboratory technology, nondestructive testing, powder metal technology or industrial laboratory technology. This educational criteria assures a base of scientific knowledge consistent with all applicants to teach the basic chemistry and physics required in this program and is therefore reasonable. In addition, an applicant must have a minimum of 4000 hours of occupational experience. At least 2000 hours of that experience must be in areas where graduates of this program can be expected to find employment. These areas are metallography, failure analysis of materials and physical and/or mechanical testing and therefore is a reasonable requirement. The remaining occupational areas are in content which supplies a limited amount of application to the program and may be the route by which an applicant continues on to the higher level of metallurgical technology. It is reasonable to allow limited substitution for this experience since a portion of the skills acquired as a result of this experience is taught within the program. While it is reasonable to allow some of this experience as valid due to part of the program's content in and of itself, it would not be sufficient to teach all of the programs or all of the content.

Subpart 5. <u>Occupational recency substitution</u>. The teaching experience allowed is only in core content and within metallurgical technology or nondestructive testing. It is therefore a reasonable substitution. It is assumed the instructor would have contact with industry and the advisory committees which allows the opportunity for currency in the fields. In addition, the individual would still need to have the remaining 500 hours of recency. The ratio of two hours of teaching to substitute for one hour of occupational experience is the same as for previously revised licenses and there is no change in this ratio.

3700.0740 METROLOGY TECHNOLOGY

Subpart 1. <u>May teach</u>. An instructor with a metrology technology license may teach in the metrology technology programs and metrology specific content courses. Based on the educational and occupational experiences required in subpart 3, it is reasonable to assume the applicant would have the base of knowledge, the skills, and the attitudes to teach this specific content. The crossover area is metrology specific and is therefore reasonable.

Subpart 2. <u>Other requirements</u>. This refers to the general requirements as specified in 3700.0100. There are no changes in this subpart. 3700.0700 is explained in General Information, Item 4.

Subpart 3. <u>Occupational and educational experience requirement</u>. Educational and occupational experience is required of this applicant. The level of content in this program involves scientific content which is better taught within an academic environment. It is reasonable to require a minimum of 2 years education in areas which would assure the foundation and consistency of the foundation areas taught within this program consisting of both basic and advanced mathematics, statistical analysis, and metric measurements. The areas of education chosen were selected for their content in these areas and are therefore The occupational experience requirement in testing, reasonable. calibrating, troubleshooting and repairing precision measurement equipment is reasonable since these are the areas in which a graduate of this program is expected to find employment. The ratio of education and occupational experience is the same as that used for previously revised licenses. There is no change in this ratio.

Subpart 4. <u>Occupational recency substitution</u>. The teaching experience allowed is only in core content and within metrology technology. It is therefore a reasonable substitution. It is assumed the instructor would have contact with industry and the advisory committees which allows the opportunity for currency in the fields. In addition, the individual would still need to have the remaining 500 hours of recency. The ratio of two hours of teaching to substitute for one hour of occupational experience is the same as for previously revised licenses and there is no change in this ratio.

> 3709.0200 Artificial Intelligence 3709.0210 Vibroacoustics Technology 3709.0220 Plastic Composites Technology 3709.0280 Telecommunication Technology

The above rules have previously been adopted.

The 3709. rule numbers are being changed to 3700.0700 to represent licenses in the technical occupational area, as

Subpart 2. <u>Other requirements</u> and Subpart 5. <u>Occupational</u> <u>recency substitution</u>. The number changes refer only to the rule move from 3709. to 3700. and are therefore reasonable.

Subpart 3. <u>Occupational recency substitution</u>. Addition of clarifying language is added to be consistent with other permanent licenses. This language is explained in General Information, Item 5.

3700.0285 SWINE PRODUCTION MANAGEMENT

Subpart 1. <u>May teach</u>. Crossover areas in this license are swine specific and limited to agriculture. The license holder is required to have a minimum of two years postsecondary education specific to swine and/or agriculture plus a corresponding ratio of occupational experience. The crossovers are limited but reasonable given the requirements listed in subpart 3, item A or B.

Subpart 2. <u>Other requirements</u>. This refers to the general requirements as specified in 3700.0100. There are no changes in this subpart. 3700.0200 refers to general requirements for agricultural instructors. There are no changes in this subpart.

Subpart 3. Educational and occupational experience.

Item A. A degree in an agricultural area is appropriate and reasonable for the content in agricultural: facility design and ventilation, finances and budgeting, animal science breeding and nutrition, agricultural marketing, and all areas of study and applications to swine production within this program. The occupational experience is specific to the swine area and encompasses breeding, farrowing, nursery and finishing. This is necessary to assure the breadth and depth of swine production required in larger intensive operations. Therefore it is reasonable to require such experience.

Item B. Allows swine content specific education. The primary focus is application of the principles taught in the broad agricultural educational programs as it pertains to swine production and is thus reasonable. The occupational experience is increased by 2000 hours and is reasonable since the education is decreased by two years from item A. The occupational experience rationale remains the same.

Subpart 4. <u>Substitution for occupational recency</u>. The only teaching experience allowed is in swine production and management which is reasonable since this is a swine specific program. It is reasonable to assume an applicant is cognizant of current production and management trends due to the industrial visits and advisory committee activities.